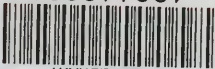


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NUMBER 9

SOME BIRDS OF THE FRESNO DISTRICT, CALIFORNIA

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BY
JOHN G. TYLER



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NOTE

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PREFACE

In presenting this list of the birds of the Fresno district the author is aware of its incompleteness. In this connection it might be well to state that some fifty species of birds reported from various sources have been omitted entirely for the reason that nothing definite could be recorded in regard to their habits and distribution, or because some doubt existed as to their being correctly identified.

More than ten years have elapsed since the first notes for this work were jotted down and in view of the mass of data available it seemed worth while to put on record the result of these years of observation in a region that has been all but neglected by ornithologists.

In looking over such literature as was available the writer has frequently been impressed with the lack of definite dates and other information regarding many of our most common birds. In many cases only two or three nesting or migration dates have been available from the entire State and these from widely separated points. It was the desire to place on record the many apparently obvious but hard-to-find facts pertaining to the birds of central California that, more than anything else perhaps, induced me to hasten the completion of this work.

Efforts were made to communicate with several persons who were known to have worked in this field previous to the advent of those who are now interested in bird study, with a thought of incorporating in the present paper such information as they might furnish; but the project was finally abandoned, as it proved to be an impossible task to learn the addresses of one or two, while the few replies that were received did not contain a sufficient amount of the desired information to be of distinct value.

The present paper, then, is simply a compilation of the knowledge of the present day workers in this part of the State, and should be regarded more as a vantage point from which we may begin anew a series of better and more thorough observations, than as a final review of all that is to be learned of the birds of Fresno County.

My only regret is that so little time has been available for bird study; but should my readers succeed in gleaning here and there from these pages some few grains of information that will tend to make them better acquainted with our feathered friends, or that will add a few facts to the general knowledge concerning the birds of this region, then the author's labors will not have been in vain. The real mission of this work will have been fulfilled, however, only when someone, more fortunately equipped with time and opportunities than the writer has ever been, is lead to see, not the little that has been done but rather the wonderful field for original research that exists in Fresno County, and is persuaded to take up and complete this work that has ever been so fascinating.

THE FRESNO DISTRICT DEFINED

The above term has been applied in this paper to an area of which the city of Fresno is the center. The boundaries of this district, which have been arbitrarily fixed by the author, are, in some cases, not well defined; but it has been the writer's intention to include in this work notes from the floor of the valley only; and where occasional references have been made to stations outside of these limits they have been used with the belief that they might add to the general knowledge concerning the distribution of the particular species under consideration.

In general it may be said that the limits of the district here concerned are marked on the west by Firebaugh at the north and Wheatville at the south. To the east of Fresno a line might be drawn along the base of the Sierra Nevada foothills, beginning at Friant on the north and extending south through Centerville to Reedley. The San Joaquin River forms a natural northern boundary, while Laton and Riverdale are the most southern stations. This region lies in the exact geographical center of the state of California, with an average elevation of not over four hundred feet. It will not be surprising, then, to note that the majority of the birds listed are characteristic of the Lower Sonoran life zone, with species from higher belts occurring as migrants or winter visitants.

Within the Fresno district there are no natural woods with the exception of the oaks, willows, and sycamores along the San Joaquin River, the oaks and willows in the Kings River bottom, and a fringe of willows and cottonwoods that are found along some of the larger sloughs and canals. A growth of splendid valley oaks along the southern edge of the district, is a field scarcely as yet touched by any of the bird students of Fresno County; and that region, together with much of the bottom land along the Kings River from Centerville to Reedley, should furnish a wealth of interesting material if systematically worked. Personally, the author has spent the greater part of his all too little spare time in the highly cultivated and thickly settled section about Fresno, with occasional visits to other parts of the valley.

STATUS OF THE WATER-BIRD POPULATION

The water birds of the region about Fresno, although highly interesting, are difficult of study. Their occurrence or absence depends upon the abundance or scarcity of water in the valley; hence their numbers vary greatly from season to season. One may sometimes spend the whole summer in locating the most favorable ponds and sloughs only to find that on account of a minimum rainfall these ponds are entirely dried up the next season. Again an unusually wet winter may result in an abundance of water and its accompanying host of birds in places where they had been almost unknown previously.

It is with regret that we note a gradually diminishing number of water fowl returning to us each fall. Doubtless the next few years will see the passing of several species forever, so far as this valley is concerned. While it is probably true that gunners are in a large measure responsible for the decrease in numbers of many species, particularly of the ducks and geese, yet a changed environment has been a potent factor in bringing about the present condition. It only requires a day's journey about the valley to convince anyone that conditions are rapidly becoming unsuited for waterfowl. The large grain and stock ranches are being subdivided, reclamation work is steadily reducing the swamp-covered areas, vineyards and orchards are springing up everywhere with a consequent great increase in population. Even the tule ponds that remain are often unsuitable for a nesting place on account of the custom of using them as foraging grounds for bands of hogs.

Such birds as rear their young in a very few weeks and are able to make use of any temporary overflow pond are not in immediate danger; but the ducks and geese and others that require concealment during the summer, or large open fields in winter, are surely doomed.

The author does not claim to have enumerated in the following pages all of the water birds that occur in the region under consideration, but mention has been made of each species that has been identified and it is hoped that the little introduction that has been given to some of the most beautiful and valuable of our birds will arouse a greater interest in them before many of them are gone forever.

ACKNOWLEDGMENTS

In the preparation of this paper the author has been the recipient of much valuable assistance. In fact, without this help the present report could not have been successfully completed. Acknowledgments are due to Miss Winifred Wear, Mr. Frank M. Lane, Mr. Chas. E. Jenney, and other present-day workers in this field; to my friend and fellow ornithologist, Mr. Joseph Sloanaker, for a wealth of notes from the vicinity of Raisin City; to Mr. A. D. Ferguson, District Deputy of the Fish and Game Commission, for permits to take specimens of doubtful species; to my wife who assisted greatly in the actual work of getting a mass of notes into printable shape; and especially to Mr. Joseph Grinnell of the California Museum of Vertebrate Zoology for patiently identifying specimens and assisting in many other ways. To these and all others who assisted in any way, the author takes this opportunity of expressing his sincere thanks.

The nomenclature adopted in the following list is, except in a very few cases, that of the Third Edition of the American Ornithologists' Union *Check-List of North American Birds* (1910).

CHECK-LIST OF THE SPECIES

1. WESTERN GREBE. *Aechmophorus occidentalis* (Lawrence).
2. PIED-BILLED GREBE. *Podilymbus podiceps* (Linnaeus).
3. CALIFORNIA GULL. *Larus californicus* Lawrence.
4. FORSTER TERN. *Sterna forsteri* Nuttall.
5. BLACK TERN. *Hydrochelidon nigra surinamensis* (Gmelin).
6. FARALLON CORMORANT. *Phalacrocorax auritus albociliatus* Ridgway.
7. WHITE PELICAN. *Pelecanus erythrorhynchos* Gmelin.
8. RED-BREASTED MERGANSER. *Mergus serrator* Linnaeus.
9. MALLARD. *Anas platyrhynchos* Linnaeus.
10. BALDPATE. *Mareca americana* (Gmelin).
11. GREEN-WINGED TEAL. *Nettion carolinense* (Gmelin).
12. CINNAMON TEAL. *Querquedula cyanoptera* (Vieillot).
13. SHOVELLER. *Spatula clypeata* (Linnaeus).
14. PINTAIL. *Dafila acuta* (Linnaeus).
15. WOOD DUCK. *Aix sponsa* (Linnaeus).
16. REDHEAD. *Marila americana* (Eyton).
17. RUDDY DUCK. *Erismatura jamaicensis* (Gmelin).
18. LESSER SNOW GOOSE. *Chen hyperboreus hyperboreus* (Pallas).
19. WHITE-FRONTED GOOSE. *Anser albifrons gambeli* Hartlaub.
20. CANADA GOOSE. *Branta canadensis canadensis* (Linnaeus).
21. HUTCHINS GOOSE. *Branta canadensis hutchinsi* (Richardson).
22. FULVOUS TREE-DUCK. *Dendrocygna bicolor* (Vieillot).
23. WHISTLING SWAN. *Olor columbianus* (Ord).
24. WHITE-FACED GLOSSY IBIS. *Plegadis guarauna* (Linnaeus).
25. AMERICAN BITTERN. *Botaurus lentiginosus* (Montagu).
26. LEAST BITTERN. *Ixobrychus exilis* (Gmelin).
27. GREAT BLUE HERON. *Ardea herodias herodias* Linnaeus.
28. ANTHONY GREEN HERON. *Butorides virescens anthonyi* (Mearns).
29. BLACK-CROWNED NIGHT HERON. *Nycticorax nycticorax naevius* (Boddaert).
30. SANDHILL CRANE. *Grus mexicana* (Müller).
31. VIRGINIA RAIL. *Rallus virginianus* Linnaeus.
32. FLORIDA GALLINULE. *Gallinula galeata* (Lichtenstein).
33. COOT. *Fulica americana* Gmelin.
34. NORTHERN PHALAROPE. *Lobipes lobatus* (Linnaeus).
35. AVOCET. *Recurvirostra americana* Gmelin.
36. BLACK-NECKED STILT. *Himantopus mexicanus* (Müller).
37. WILSON SNIPE. *Gallinago delicata* (Ord).
38. LEAST SANDPIPER. *Pisobia minutilla* (Vieillot).
39. GREATER YELLOW-LEGS. *Totanus melanoleucus* (Gmelin).
40. LONG-BILLED CURLEW. *Numenius americanus* Bechstein.
41. HUDSONIAN CURLEW. *Numenius hudsonicus* Latham.
42. KILLDEER. *Oxyechus vociferus* (Linnaeus).
43. MOUNTAIN PLOVER. *Podasocys montanus* (Townsend).
44. PLUMED QUAIL. *Oreortyx picta plumifera* (Gould).
45. VALLEY QUAIL. *Lophortyx californica vallicola* (Ridgway).

46. BAND-TAILED PIGEON. *Columba fasciata fasciata* Say.
47. WESTERN MOURNING DOVE. *Zenaidura macroura marginella* (Woodhouse).
48. CALIFORNIA CONDOR. *Gymnogyps californianus* (Shaw).
49. TURKEY VULTURE. *Cathartes aura septentrionalis* Wied.
50. WHITE-TAILED KITE. *Elanus leucurus* (Vieillot).
51. MARSH HAWK. *Circus hudsonius* (Linnaeus).
52. SHARP-SHINNED HAWK. *Accipiter velox* (Wilson).
53. COOPER HAWK. *Accipiter cooperi* (Bonaparte).
54. WESTERN RED-TAILED HAWK. *Buteo borealis calurus* Cassin.
55. SWAINSON HAWK. *Buteo swainsoni* Bonaparte.
56. AMERICAN ROUGH-LEGGED HAWK. *Archibuteo lagopus sancti-johannis* (Gmelin).
57. FERRUGINOUS ROUGH-LEGGED HAWK. *Archibuteo ferrugineus* (Lichtenstein).
58. GOLDEN EAGLE. *Aquila chrysaetos* (Linnaeus).
59. BALD EAGLE. *Haliaeetus leucocephalus leucocephalus* (Linnaeus).
60. PRAIRIE FALCON. *Falco mexicanus* Schlegel.
61. DUCK HAWK. *Falco peregrinus anatum* Bonaparte.
62. NORTHERN PIGEON HAWK. *Falco columbarius columbarius* Linnaeus.
63. AMERICAN SPARROW HAWK. *Falco sparverius sparverius* Linnaeus.
64. BARN OWL. *Aluco pratincola* (Bonaparte).
65. LONG-EARED OWL. *Asio wilsonianus* (Lesson).
66. SHORT-EARED OWL. *Asio flammeus* (Pontoppidan).
67. SOUTHERN SPOTTED OWL. *Strix occidentalis occidentalis* (Xantus).
68. CALIFORNIA SCREECH OWL. *Otus asio bendirei* (Brewster).
69. PACIFIC HORNED OWL. *Bubo virginianus pacificus* Cassin.
70. BURROWING OWL. *Speotyto cunicularia hypogaea* (Bonaparte).
71. ROAD-RUNNER. *Geococcyx californianus* (Lesson).
72. CALIFORNIA CUCKOO. *Coccyzus americanus occidentalis* Ridgway.
73. BELTED KINGFISHER. *Ceryle alcyon* (Linnaeus).
74. WILLOW WOODPECKER. *Dryobates pubescens turati* (Malherbe).
75. NUTTALL WOODPECKER. *Dryobates nuttalli* (Gambel).
76. RED-BREASTED SAPSUCKER. *Sphyrapicus ruber* (Gmelin).
77. CALIFORNIA WOODPECKER. *Melanerpes formicivorus bairdi* Ridgway.
78. LEWIS WOODPECKER. *Asyndesmus lewisi* Riley.
79. RED-SHAFTED FLICKER. *Colaptes cafer collaris* Vigors.
80. TEXAS NIGHTHAWK. *Chordeiles acutipennis texensis* Lawrence.
81. VAUX SWIFT. *Chaetura vauxi* (Townsend).
82. BLACK-CHINNED HUMMINGBIRD. *Archilochus alexandri* (Bourcier & Mulsant).
83. ANNA HUMMINGBIRD. *Calypte anna* (Lesson).
84. RUFOUS HUMMINGBIRD. *Selasphorus rufus* (Gmelin).
85. WESTERN KINGBIRD. *Tyrannus verticalis* Say.
86. ASH-THROATED FLYCATCHER. *Myiarchus cinerascens cinerascens* (Lawrence).
87. SAY PHOEBE. *Sayornis sayus* (Bonaparte).
88. BLACK PHOEBE. *Sayornis nigricans* (Swainson).

89. WESTERN WOOD PEWEE. *Myiochanes richardsoni richardsoni* (Swainson).
90. CALIFORNIA HORNED LARK. *Otocoris alpestris actia* Oberholser.
91. YELLOW-BILLED MAGPIE. *Pica nuttalli* (Audubon).
92. BLUE-FRONTED JAY. *Cyanocitta stelleri frontalis* (Ridgway).
93. CALIFORNIA JAY. *Aphelocoma californica californica* (Vigors).
94. WESTERN RAVEN. *Corvus corax sinuatus* Wagler.
95. WESTERN CROW. *Corvus brachyrhynchos hesperis* Ridgway.
96. DWARF COWBIRD. *Molothrus ater obscurus* (Gmelin).
97. YELLOW-HEADED BLACKBIRD. *Xanthocephalus xanthocephalus* (Bonaparte).
98. BICOLORED BLACKBIRD. *Agelaius phoeniceus californicus* Nelson.
99. TRICOLORED BLACKBIRD. *Agelaius tricolor* (Audubon).
100. WESTERN MEADOWLARK. *Sturnella neglecta* Audubon.
101. BULLOCK ORIOLE. *Icterus bullocki* (Swainson).
102. BREWER BLACKBIRD. *Euphagus cyanocephalus* (Wagler).
103. LINNET. *Carpodacus mexicanus frontalis* (Say).
104. WILLOW GOLDFINCH. *Astragalinus tristis salicamans* (Grinnell).
105. GREEN-BACKED GOLDFINCH. *Astragalinus psaltria hesperophilus* Oberholser.
106. LAWRENCE GOLDFINCH. *Astragalinus lawrencei* (Cassin).
107. ENGLISH SPARROW. *Passer domesticus* (Linnaeus).
108. WESTERN VESPER SPARROW. *Pooecetes gramineus confinis* Baird.
109. WESTERN SAVANNAH SPARROW. *Passerculus sandwichensis alaudinus* Bonaparte.
110. WESTERN GRASSHOPPER SPARROW. *Ammodramus savannarum bimaculatus* (Swainson).
111. WESTERN LARK SPARROW. *Chondestes grammacus strigatus* (Swainson).
112. INTERMEDIATE SPARROW. *Zonotrichia leucophrys gambeli* (Nuttall).
113. GOLDEN-CROWNED SPARROW. *Zonotrichia coronata* (Pallas).
114. WESTERN CHIPPING SPARROW. *Spizella passerina arizonae* Coues.
115. BREWER SPARROW. *Spizella breweri* Cassin.
116. SIERRA JUNCO. *Junco oreganus thurberi* Anthony.
117. CALIFORNIA SAGE SPARROW. *Amphispiza nevadensis canescens* Grinnell.
118. HEERMANN SONG SPARROW. *Melospiza melodia heermanni* Baird.
119. FORBUSH SPARROW. *Melospiza lincolni striata* Brewster.
120. SLATE-COLORED FOX SPARROW. *Passerella iliaca schistacea* Baird.
121. KADIAK FOX SPARROW. *Passerella iliaca insularis* Ridgway.
122. SAN DIEGO TOWHEE. *Pipilo maculatus megalonyx* Baird.
123. CALIFORNIA BROWN TOWHEE. *Pipilo crissalis crissalis* (Vigors).
124. BLACK-HEADED GROSBEAK. *Zamelodia melanocephala* (Swainson).
125. WESTERN BLUE GROSBEAK. *Guiraca caerulea lazula* (Lesson).
126. LAZULI BUNTING. *Passerina amoena* (Say).
127. WESTERN TANAGER. *Piranga ludoviciana* (Wilson).
128. WESTERN MARTIN. *Progne subis hesperia* Brewster.
129. CLIFF SWALLOW. *Petrochelidon lunifrons lunifrons* (Say).
130. BARN SWALLOW. *Hirundo erythrogastra* Boddaert.
131. TREE SWALLOW. *Iridoprocne bicolor*. (Vieillot).
132. NORTHERN VIOLET-GREEN SWALLOW. *Tachycineta thalassina lepida* Mearns.

133. ROUGH-WINGED SWALLOW. *Stelgidopteryx serripennis* (Audubon).
134. CEDAR WAXWING. *Bombycilla cedrorum* Vieillot.
135. PHAINOPEPLA. *Phainopepla nitens* (Swainson).
136. CALIFORNIA SHRIKE. *Lanius ludovicianus gambeli* Ridgway.
137. CALIFORNIA LEAST VIREO. *Vireo belli pusillus* Coes.
138. CALIFORNIA YELLOW WARBLER. *Dendroica aestiva brewsteri* Grinnell.
139. AUDUBON WARBLER. *Dendroica auduboni auduboni* (Townsend).
140. BLACK-THROATED GRAY WARBLER. *Dendroica nigrescens* (Townsend).
141. WESTERN YELLOWTHROAT. *Geothlypis trichas occidentalis* Brewster.
142. LONG-TAILED CHAT. *Icteria virens longicauda* Lawrence.
143. GOLDEN PILEOLATED WARBLER. *Wilsonia pusilla chryseola* Ridgway.
144. AMERICAN PIPIT. *Anthus rubescens* (Tunstall).
145. WESTERN MOCKINGBIRD. *Mimus polyglottos leucopterus* (Vigors).
146. CALIFORNIA THRASHER. *Toxostoma redivivum* (Gambel).
147. ROCK WREN. *Salpinctes obsoletus obsoletus* (Say).
148. SAN JOAQUIN WREN. *Thryomanes bewicki drymoecus* Oberholser.
149. TULE WREN. *Telmatodytes palustris paludicola* (Baird).
150. SIERRA CREEPER. *Certhia familiaris zelotes* Osgood.
151. SLENDER-BILLED NUTHATCH. *Sitta carolinensis aculeata* Cassin.
152. RED-BREASTED NUTHATCH. *Sitta canadensis* Linnaeus.
153. PYGMY NUTHATCH. *Sitta pygmaea pygmaea* Vigors.
154. CALIFORNIA BUSH-TIT. *Psaltiriparus minimus californicus* Ridgway.
155. RUBY-CROWNED KINGLET. *Regulus calendula calendula* (Linnaeus).
156. WESTERN GNATCATCHER. *Polioptila caerulea obscura* Ridgway.
157. DWARF HERMIT THRUSH. *Hylocichla guttata nanus* (Audubon).
158. WESTERN ROBIN. *Planesticus migratorius propinquus* (Ridgway).
159. NORTHERN VARIED THRUSH. *Ixoreus naevius meruloides* (Swainson).
160. WESTERN BLUEBIRD. *Sialia mexicana occidentalis* Townsend.
161. MOUNTAIN BLUEBIRD. *Sialia currucoides* (Bechstein).

GENERAL ACCOUNTS OF THE BIRDS

WESTERN GREBE. *Aechmophorus occidentalis* (Lawrence).

The Western Grebe is not of common occurrence anywhere within the region covered by this paper. Hunters tell of the occurrence of this Grebe during the winter months on some of the larger sloughs. This species may possibly breed in the vicinity of Summit Lake, especially in seasons of high water. The fact of its remaining through the summer on Tulare Lake and Buena Vista Lake, in Kern County, would indicate that it is not averse to climatic or other conditions in the valley.

June 8, 1912, Mr. J. Eugene Law and the writer observed what we felt quite certain was a Western Grebe near White's Bridge. All the lower areas in the pasture of the great Chowchilla Ranch lying along the north side of the road were inundated by the overflow from several sloughs. As we drove along the grade the bird, at first sight taken for a cormorant, was seen to fly across the road and plunge into a pond probably two hundred yards away. It swam with arched neck and bill pointing upward at quite an angle, frequently diving and remaining under for several seconds. There seemed no way of approaching it more closely but we watched it for some time through a powerful glass and agreed that it was, with very little doubt, a Western Grebe. The silvery white underparts and long pointed bill seemed sufficient characters upon which to base our identification.

PIED-BILLED GREBE. *Podilymbus podiceps* (Linnaeus).

Grebes of any kind seem scarce anywhere within the Fresno district and those that do occur are so secretive and retiring that they are not often seen, especially in the summer months. Personally I have only found one nest. That one was probably rendered unfit for occupancy through my desire to be certain that no eggs were buried in the mass of decaying vegetation composing it. This material floated, partly submerged, in two feet of water in a small tule pond six miles east of Clovis. The date was June 9, 1908. My disturbing the nest was not the only fatal circumstance, for a subsequent visit showed the pond to be drying up, and no Grebes were to be found.

A small grebe is known to occur in winter on some of the ponds and sloughs, but I am not prepared to say whether it is this species or the American Eared Grebe.

CALIFORNIA GULL. *Larus californicus* Lawrence.

This Gull is a winter visitant to many of the larger sloughs along the western border of the Fresno district, being most often noted in the region northward from Summit Lake. I have never noticed any tendency for it to assemble in large flocks, companies of even four or five being much less common than single birds.

November 28, 1904, a gull was examined near the artesian well twenty miles southwest of Fresno. It had evidently been shot by hunters some days previous to my visit to the lake.

FORSTER TERN. *Sterna forsteri* Nuttall.

This species was noted in large numbers the last week in June, 1902, when thousands of acres of pasture land and not a few grain fields were inundated by

a sudden rise of water due to melting snow in the mountains. The water was distributed for miles over the level country near New Hope, and produced a condition very favorable to many species of water birds. Probably *Sterna forsteri* nested abundantly, but no attempt to prove this was made, because of the difficulties in the way.

June 8, 1912, Mr. J. Eugene Law and the writer observed a number of these splendid terns flying over the overflowed sloughs four miles east of White's Bridge. They were flying singly and at no great height, frequently poising for a drop to the surface of the water. In each case the bird was flying northward and was not long in sight.

BLACK TERN. *Hydrochelidon nigra surinamensis* (Gmelin).

The Black Tern is of regular occurrence during the summer wherever suitable places can be found. June 28, 1902, great numbers of them hovered, screaming, over the thousands of acres of overflowed land near New Hope. From their actions I felt certain that they were breeding, but had no means of investigating.

Mr. Chester Lamb found this species breeding near Laton, in the southern part of the county, May 31, 1910, and collected from a small mud island a set of three eggs, together with an elaborate wild-oat nest. This nest, he stated, was far more bulky than the frail accumulation of dry grass that composed the nests of a colony of Black Terns that he found near Los Baños, in Merced County, during the preceding week.

May 11, 1908, I heard the cry of this species near Clovis and was surprised to see three of the birds flying over the vineyards, far from any pond. They tacked, dipped, and flapped along, making their way with nighthawk-like flight against the strong wind that then prevailed.

May 30, 1912, a colony of these handsome little terns was occupying a broken-down patch of last year's tules in an overflowed pasture near Firebaugh. With a glass several of the birds could be seen sitting on nests amid the floating dry tules. A swiftly flowing canal intervened and time did not permit of an attempt at a closer inspection of the nests. As there were several acres of these tules it is probable that quite an extensive colony was nesting there, but not over half a dozen birds were in sight at one time as they skimmed over the shallow water.

Sometimes in late July a number of these terns may be seen around some of the ponds southwest of Fresno where they are not known to breed. As the birds are usually in the mixed plumage of the immature it seems probable that these are young-of-the-year that are shifting for themselves and have wandered away from the place where they were raised.

FARALLON CORMORANT. *Phalacrocorax auritus albociliatus* Ridgway.

Cormorants are of common occurrence during the winter on the large sloughs southwest of Fresno. I have observed them perched on dead branches above the water in true cormorant style, or swimming with their bodies submerged and only the long snake-like necks appearing above the water. When disturbed they would often dive and remain under water for several seconds, to appear again many yards from where they went down.

These cormorants disappear during the summer, doubtless to join a breed-

ing colony at some more favorable point. Possibly the rookery described by Goldman (CONDOR, x, 1908, p. 201) includes the winter birds from this place.

It is highly probable that certain individuals that are for some reason non-breeders remain with us all summer; for I have observed cormorants along certain sloughs as late as the first week in June, and May 15, 1912, nine were seen flying together. This was not far from White's Bridge, and I have thought that somewhere on the great Chowchilla Ranch there might possibly be a breeding colony as yet unknown to the naturalists of this part of the state.

WHITE PELICAN. *Pelecanus erythrorhynchos* Gmelin.

Near Summit Lake one late October day the writer concealed himself behind a levee to await the approach of what appeared to be a flock of geese. "Pelicans," called my companion, and his identification proved to be correct. There were over two hundred birds in the three flocks that were seen on that occasion, and to the writer, who was then unacquainted with any of our waterfowl, they were objects of wonder and admiration as they passed over at no great height in regular formation and with a slow dignified flight. That was ten years ago, but the White Pelican still occurs through the winter over most of the slough country northward from Summit Lake.

November 29, 1904, a flock of about fifty was seen near New Hope. December 5, 1905, near the lake at the Artesian Well, a similar flock was seen flying over. April 6, 1906, another assemblage was noted circling about overhead on the plains not far from the present site of Raisin.

The species is reported to breed in numbers, during some seasons at least, at Tulare Lake, some fifty miles south of us.

RED-BREADED MERGANSER. *Mergus serrator* Linnaeus.

The "Fish Duck," as this species is commonly known to hunters, occurs on many of the larger sloughs during the winter season. Nearly everyone realizes that this duck is of no value for the table and it is seldom molested, except by that class of hunters who draw the line at no living creature that affords a mark to shoot at.

Generally two mergansers are observed together, flying over with strong wing strokes, or quietly fishing in some secluded bend of a slough.

MALLARD. *Anas platyrhynchos* Linnaeus.

Mallards are probably the most common breeding ducks of this part of the valley. Some years, when conditions are favorable, they nest in large numbers on the west side sloughs and marshes, their abundance or scarcity during the following winter depending, seemingly, upon the number that are raised here rather than migrants from the north. Sometimes when several hard rain storms follow one upon the other, a great many small puddles are formed in the heavy clay soil east of Clovis. Occasionally a Mallard or two can be found on these puddles, especially during December or January. Some of the larger ponds, caused by the overflow from a flume, occasionally shelter a pair of these ducks all through the summer.

June 26, 1906, two companions and myself noticed a female Mallard in a large ditch, acting in a rather strange manner, and we at once suspected that a brood of young ducks was concealed near by. A few minutes' search revealed

three or four of the little fellows hidden in the tall grass at the water's edge. One of these that was captured, was about the size of a full-grown teal, and though apparently fully feathered he seemed unable to fly. Upon being released the duckling lost no time in getting out of sight, and a party passing the place a moment later would never have suspected the presence of a duck near that ditch.

The Mallards will undoubtedly be the last ducks to become extinct in this part of the state. The presence of an abundance of water is not one of their requirements and isolated pairs sometimes nest in alfalfa fields where the nearest water may be a small irrigation ditch nearly a quarter of a mile away.

The writer has observed Mallards during the summer months in almost every part of the valley, from the tule ponds southeast of Fresno to the sloughs near White's Bridge, while in the winter they have no less wide a range, depending upon the amount of rainfall and the consequent number of ponds.

BALDPATE. *Mareca americana* (Gmelin).

"Widgeon" is the common local name of this duck. It is a winter visitor, arriving in October. It then frequents the sloughs and larger bodies of water in good-sized flocks. At times a few individuals are seen to accompany flocks of Pintails. A few of these ducks pass the winter on the San Joaquin River near Lane's Bridge.

The whistled "whee, whee, whee," produced by this bird's wings in flight often serves to identify the Baldpate when the bird itself cannot be seen.

GREEN-WINGED TEAL. *Nettion carolinense* (Gmelin).

This little duck is one of the first of the family to arrive in the fall and is, on the whole, probably the most abundant species in the valley. It frequents the small mud holes and tule-bordered ditches rather than large sheets of open water. Some winters the Mallard far outnumbers this teal, and again the Widgeon or Pintail seems to hold the most prominent place; but the number of Green-winged Teal does not seem to vary greatly from year to year.

CINNAMON TEAL. *Querquedula cyanoptera* (Vieillot).

As a summer visitant this handsome little duck probably ranks next to the Mallard in abundance and has almost as wide a range. In certain seasons it is probable that it even outnumbers its larger relative; but unlike the Mallard it does not seem to be at all common in winter.

January 10, 1912, I was shown a beautiful male Cinnamon Teal that had been shot from a flock of about a dozen individuals found in a small muddy puddle near Riverdale. The hunter who secured this duck informed me that in nearly fifteen years experience it was the first time, so far as he could remember, that this species had been seen at that time of the year. The birds usually make their first appearance in February.

In May and June one or two pairs of these ducks are usually to be found about any pond or slough that will afford concealment. They doubtless breed along many of the west side sloughs and probably within seven or eight miles of Fresno, as a few pairs remain all through the summer on the ponds at the city sewer farm.

The nest that was examined in May was simply a slight hollow picked bare of grass and unlined. It was situated in a thick clump of grass on a small island

in one of the sloughs near White's Bridge. As the female bird had not yet commenced to lay, it is probable that the nest would have presented quite a different appearance a couple of weeks later. But a sudden rise of water in the slough completely inundated the little island with its clump of grass.

None of our other ducks show the fearlessness of these little fellows, it being no difficult feat, often, to approach to within a few yards of a pair. They swim slowly away, keeping close to shore and refusing to separate, even when finally compelled to seek safety in flight.

SHOVELLER. *Spatula clypeata* (Linnaeus).

"Spoonbills" are common winter visitants to the shallow ponds and sloughs in the valley. They do not go about in large flocks, but small companies may often be found associating with various other ducks. Although never present in great numbers, the Shovellers are always in evidence and sometimes make up the major portion of the bags secured by hunters. This duck and the Green-winged Teal fall easy prey to the market hunters and fully three-fourths of the ducks noted in the meat markets here have been of these two species.

PINTAIL. *Dafila acuta* (Linnaeus).

A very common and much sought-for duck, occurring throughout the winter in large flocks. Over all the west side marshes and on the many sloughs that cut through the country around Wheatville this species is to be found in goodly numbers. Reports of "Sprigs" nesting have come in at times.

WOOD DUCK. *Aix sponsa* (Linnaeus).

Personally the author has not observed this duck, but it has been mentioned time and again by hunters who state that it is occasionally met with, though to be considered rare. It seems to occur most often in the wooded swampy region to the south and east of Wheatville. Mr. Joseph Sloanaker observed a pair of Wood Ducks in the river near the bridge at Reedley, in the latter part of April, 1910. Not infrequently a specimen of this duck finds its way into a local taxidermist's shop.

REDHEAD. *Marila americana* (Eyton).

Apparently not very common. The author has never seen but two birds, and the hunters with whom I have talked state that they meet with it only occasionally. A friend shot one on a small pond near the Artesian Lake, December 2, 1904.

Rumors have come to me of the breeding of this duck at several points in the valley, particularly in the vicinity of Firebaugh, and there seems no good reason for discrediting such rumors when one is familiar with the nature of the country in that part of the valley.

RUDDY DUCK. *Erismatura jamaicensis* (Gmelin).

These little ducks are often seen in winter on almost any pond that is of sufficient size to allow them to keep out of gun range. They are most often seen in flocks of ten or twelve, swimming in a rather compact company and reluctant to take wing unless compelled to do so, when their flight proves to be strong and very rapid.

On several occasions I have seen a flock of these ducks swim about indif-

ferently while several ineffective shots rained pellets all around them. This duck is often called "Pintail" by the hunters.

LESSER SNOW GOOSE. *Chen hyperboreus hyperboreus* (Pallas).

White geese swarm by thousands on the west side plains. No record has been obtained of their date of arrival in the fall, but as late as April 7 (1906) they were congregated in large numbers on several hundred acres of grassy pasture near the Artesian Lake. Just before sundown, as I drove past, the ground was white almost as far as one could see and the noise was deafening. I have not had an opportunity of measuring any of these geese, but there appears to be a great variation in size. During January large flocks of Snow Geese move restlessly about, flying at a great height, and generally travelling toward the north.

WHITE-FRONTED GOOSE. *Anser albifrons gambeli* Hartlaub.

Less common through the winter than the white geese, this bird, which inhabits much the same country, is nearly always in evidence on account of its loud, clear call notes. This species is sometimes found along the sloughs in October, and remains, in some instances at least, until the second week in April. During periods of stormy weather they often fly over in large flocks, apparently with no definite object in view other than a change of feeding grounds. Their cry is often heard at night, especially during moonlight evenings.

CANADA GOOSE. *Branta canadensis canadensis* (Linnaeus).

Under this heading I have placed all the large "honkers" found in this part of the San Joaquin Valley. After examining not a few geese in the markets and in the possession of hunters, I have concluded that the race *occidentalis* either does not occur as commonly as supposed or that its validity as a subspecies is rather questionable. I have never yet seen a bird that would fit the book descriptions of that form.

No doubt there are persons who have access to a sufficiently large series of specimens to enable them to work over this group thoroughly and if necessary name one more subspecies to make provision for those individuals that are not quite typical of either *canadensis* or *occidentalis*. After all, though, would it not be a much more satisfactory solution to adopt the nomenclature of the market hunters and simply call them all "honkers." Happy is the man who is not concerned about the presence of one or two black feathers properly placed!

Wherever large open grain fields are to be found, especially if they are not too far removed from some river or large body of water, these geese may be looked for at any time during the winter. In stormy weather they often roam around in large flocks or small detached companies. This species departs earlier in the spring than the White-fronted or Snow Geese and have usually all left the valley by the middle of March.

It seems a pity that these splendid birds cannot adapt themselves to a changed environment and thus defer that day when we will no longer be able to number them among the birds of the Fresno district.

HUTCHINS GOOSE. *Branta canadensis hutchinsi* (Richardson).

These small geese, known to hunters as "China Geese" or "Little Honkers,"

range over much of the same part of the valley as their larger relative, but usually go about in larger flocks and are more noisy.

As yet this species returns to us in large numbers each winter, but upon every return visit they find a more restricted feeding range and a greater army of hunters in the field; so it is only a matter of a few more years until this species, together with most of our large game birds, will have disappeared from this part of the state.

Farmers complain of the damage done in grain fields by these and other geese, and as the birds are not protected at any time during their winter sojourn with us they are often slaughtered in large numbers by market hunters and others.

Ten years ago when much of the country northeast of Fresno was given over to grain ranches these geese were seen very often and were sometimes noted in large numbers during late March when the spring migrations began; but during the last four or five years I have not seen half a dozen flocks anywhere east of the city.

FULVOUS TREE-DUCK. *Dendrocygna bicolor* (Vieillot).

Mr. J. Eugene Law furnishes the following notes regarding this species:

"On June 7 (1912) while on the Murphy Slough, on the Burrell Ranch (28 miles southwest of Fresno), I three times saw Fulvous Ducks, twice a pair and the other time three individuals. These were flying quite close to me and apparently settled only a little ways off among tules. At this time the water was overflowing the low lands having been on the rise for some time. The birds had not been observed during the five days previous during which time I had been in this vicinity."

These ducks are known to occur quite commonly over much of the region from Firebaugh northward, wherever suitable water occurs, and have been frequently recorded from the vicinity of Los Baños.

Mr. Law writes me further as follows: "On the 13th (June, 1912) while en route between Dos Palos and Los Baños, I think a mile or so above Dos Palos, these birds were really abundant, every little pond having two or three individuals and sometimes several little groups. At one time I saw six birds together on the wing. I noted also that they have a peculiar un-duck-like metallic call repeated rapidly as they are settling in the water or rising, which was quite new to me. Nothing that I saw would indicate that the birds were nesting at this time and the fact that there were as often three together as two might indicate that the birds observed were all males. I suppose that I saw as many as twenty-five or thirty birds during the couple of hours I spent near Dos Palos. There were, at a short distance, beds of very rank tules which would, I imagine, make proper nesting places for these birds."

WHISTLING SWAN. *Olor columbianus* (Ord).

In former years swans occurred in some numbers wherever large bodies of open water offered an inducement to spend a part of the winter. The flocks usually numbered ten or twelve birds each.

I have been informed that fifteen years ago it was no uncommon sight to

see one or two of these birds hanging up in the meat markets. There is a mounted specimen in a local taxidermist's shop, evidently prepared many years ago. At present swans are rarely seen and in a few years more will doubtless vanish forever.

WHITE-FACED GLOSSY IBIS. *Plegadis guarauna* (Linnaeus).

The occurrence of this Ibis during July and August, sometimes in large flocks, has been noted throughout the marshy country near Wheatville. July 13, 1911, four individuals were seen flying over the water in a vast overflowed area.

August 23, 1908, two were seen flying over the vineyard near the Tarpey Ranch, northeast of Fresno. They were traveling toward the mountains, and as their appearance was noted early in the morning it is possible that they had flown out of their course during the night.

I do not know of any breeding colony in this part of the valley, but the species is known to breed near Los Baños, in Merced County. It would not be surprising if a colony were to be found in the tule swamps between Wheatville and Summit Lake.

May 30, 1912, large numbers of Ibis were seen feeding in flocks along the roadside north of Firebaugh. They gave little heed to a passing automobile, but flew up in confusion when a train passed. I should estimate the number of birds seen at not less than five hundred. As they fed over the soft muddy ground, probing with their long sickle bills, I tried to decide what of my avian acquaintances they most resembled. Their glistening bronzy plumage and dignified demeanor suggested a flock of turkeys, but certain of their actions were not unlike a flock of crows.

May 20, 1912, a lone Ibis was noted near a shallow salt-grass pond six miles southwest of Fresno. He had a lonesome, dejected attitude, as he stood humped up on the muddy bank paying no attention to the noisy Stilts that were nesting all about, nor to the two pairs of friendly little Cinnamon Teal that sometimes swam quite near. When too closely approached this Ibis gave a dismal cry and flew to the opposite side of the pond.

AMERICAN BITTERN. *Botaurus lentiginosus* (Montagu).

The Bittern appears to be a fairly common resident of the swampy areas near Wheatville. December 2, 1904, two individuals were seen, one in a thick growth of marsh grass and cockleburrs, the other being flushed from some small willows along a dead slough. December 6, 1905, another one was seen, and April 7, 1906, a fourth specimen was observed.

July 13, 1911, while enjoying an automobile trip through the west side country, I observed a Bittern standing in the mud in a small sink, where her only companion was a cow. Upon passing the same place a couple of hours later the bird was seen crouching beside a large tuft of grass, looking intently at the muddy water. As a rule this bird is not so willing to be observed.

Some boys once gave me two eggs that were unquestionably those of the Bittern. They had found two nests, late in June in a large pasture, the nests being built in the rank grass not far from a slough. Five eggs were said to be the complement in each case.

LEAST BITTERN. *Ixobrychus exilis* (Gmelin).

So far as I have been able to learn this little Bittern is not at all common, even in the swampy areas. Few people seem to know it. Perhaps its habit of keeping concealed accounts for its apparent rarity, in some measure, at least. The author saw a single individual near Wheatville the first week in May, 1900.

GREAT BLUE HERON. *Ardea herodias herodias* Linnaeus.

Probably no other bird in central California receives the attention from a disinterested public that this splendid species does. Known to nearly everyone as "Crane," "Blue Crane," "Gopher Crane," or "Fish Crane," it seems fortunate that the impression prevails everywhere to the effect that this bird is strictly protected, and that to kill one would be about on a par with shooting a Turkey Vulture. If it were not for this fact the herons would have long ago disappeared from the valley.

The farmers of this county should do all in their power to afford protection to the Blue Heron, as it is one of the best gopher destroyers in existence. It is no uncommon sight to see a heron standing motionless for hours at a time in an alfalfa field waiting for a gopher to make its appearance. Small fish, frogs, and probably lizards, if they are obtainable, are eaten, and on many occasions herons have been observed in pairs on the dry barren hillsides along the San Joaquin River busily engaged in catching grasshoppers. Ability to adapt itself to changing conditions and a varied diet has caused this bird to become widely diffused throughout the valley, and has, no doubt, assisted materially in preserving the species.

Great Blue Herons formerly nested, and probably still do, in some large sycamores near the river below Friant. Mr. Chas. E. Jenney reports two sets of eggs, numbering four and five respectively, taken on March 31 several years ago. Rumors have come to me of a large present-day colony that nests in a grove of eucalyptus trees rather indefinitely located as "north of Raisin City," but the exact location seems to be unknown.

April 12, 1902, the author found a colony of nine pairs occupying a large lone cottonwood that stood on the bank of Fish Slough near New Hope. At least three of the nests contained sets of four and five eggs each, all far advanced in incubation, while three other nests held small young. Of the contents of the three remaining nests nothing certain could be learned, as they were almost inaccessible. All these nests were large, well-hollowed platforms strongly built of sticks and placed from forty to sixty feet above the ground.

Whether standing in solitary dignity in some shallow slough spearing for pollywogs, or settling in large numbers knee-deep in the overflowed fields where he has but to pick up of the abundance of food all about him, the Great Blue Heron is one of the most imposing and attractive sights of the bird life in Fresno County.

ANTHONY GREEN HERON. *Butorides virescens anthonyi* (Mearns).

The Green Heron is a common migrant throughout the valley, wherever suitable conditions exist. It has been observed along the flume ponds well up into the foothills east of Clovis, among the willows that border the San Joaquin River north of Fresno, and along many of the ditches near the city; while the

center of its abundance seems to be the over-flowed swampy areas near Wheatville.

Late in May, 1908, a dam was thrown across a certain large irrigation ditch near Clovis and a new ditch formed almost parallel to the old one. Just enough water leaked through the head gate to keep the water in the original ditch from lowering noticeably; but as there was no outlet it soon became stagnant under the warm sun and before many days seemed alive with frogs and small fish. Although a Green Heron had never been seen along this ditch previous to that time, yet the writer soon became aware of the presence of a couple of timid, awkward birds that flapped noisily from willow to willow, all the while giving voice to a series of guttural squawks, grunts, and croakings.

A careful search on June 13 along the half-mile fringe of willows resulted in finding a thin, frail, platform nest built on a small horizontal branch, almost at its extremity, and sixteen feet above the water. On this saucer-shaped structure of long, dry, wire-like twigs the owner was covering four very slightly incubated eggs. Not until I had climbed half the distance to the nest did the bird leave and then she perched nearby and occasionally barked her disapproval.

The second nest of this pair of birds, built after their first set had been removed to the author's collection, was found on June 28 in a tree scarcely fifty yards from the first one. This nest held three eggs and was about thirty feet from the ground. July 9 this bird was patiently incubating, and from the appearance of the nest a couple of months later I felt sure that a family of young herons were successfully raised in it.

BLACK-CROWNED NIGHT HERON. *Nycticorax nycticorax naevius* (Boddaert).

A common resident throughout the valley, occurring in large numbers over the marshy areas and found singly or in small companies wherever an old dead slough or ditch occurs. This species seems to prefer the vicinity of stagnant or muddy slow-flowing water, rather than the clearer, more rapid ditches.

There was at one time, and probably still is, a large breeding colony in the willows that border Fish Slough near New Hope. The farmers in that region irrigate large tracts of grain and alfalfa, using water from the slough, and often when the water is turned out there will be thousands of carp and other fish left on the ground. To this wriggling, squirming feast the herons swarm by hundreds, and it is probably the presence of such an abundance of food during the summer that has brought together the large nesting colony at this place.

SANDHILL CRANE. *Grus mexicana* (Müller).

It seems quite reasonable to suppose that both the Sandhill and Little Brown cranes occur at times in the Fresno district; but the great majority of the host of our winter visitant cranes are *mexicana*, and the few specimens that I have had an opportunity to examine measured well beyond the maximum for *canadensis*.

Our cranes first arrive in September and are fairly common in suitable places all through the winter, beginning their northward flight sometimes by March 20, but usually not until the first of April. Two or three weeks are required for all the flocks to have gotten safely under way on their long journey, and I have sometimes suspected that certain individuals occasionally remained all

summer. I saw three cranes not far from Lillis as late as May 3, 1900. The height at which these migrating cranes fly on clear warm days is almost incredible and the number that pass over in a single day is not less remarkable. The past season (1912) showed a very early migration, many flocks of cranes passing over March 17.

VIRGINIA RAIL. *Rallus virginianus* Linnaeus.

A fairly common resident of suitable areas, but not often seen on account of its seclusive habits. It has been noted in the overflowed districts of the Wheatville region, and among the grass and sedges of shallow sloughs along the San Joaquin River near Riverview. On October 14, 1910, a fine male was found dead in the yard of a residence within the city limits of Fresno. This specimen is now in the collection of Miss Winifred Wear, of this city.

FLORIDA GALLINULE. *Gallinula galeata* (Lichtenstein).

Florida Gallinules appear to be quite generally distributed over the valley, but are nowhere as much in evidence as their near relatives, the coots. In point of numbers the mud-hens have all the best of it, although the gallinules' secretive habits may have something to do with the apparent scarcity of the species in some localities. The local name "red-billed mud-hen" would seem to be an appropriate one for this bird, as the red bill is a distinguishing mark as far as the bird can be seen.

November 26, 1907, two gallinules were seen on a pond near Letcher about twenty-five miles northeast of Fresno. Although well up into the foothill region and somewhat out of the range covered in this list, yet the record was thought worthy of note in the present paper, especially since the species was subsequently seen not far from the same place and may be a permanent resident there.

April 19, 1908, a gallinule arose from a small pond at the roadside, walked across the road and disappeared among the cat-tails and wire grass. This was near a series of small ponds caused by the overflow of a flume and although conditions seemed very favorable for the breeding of these birds I could find no nests, and on later visits the birds were not to be found. These ponds were about seven miles east of Clovis and the same distance from the locality of the first record. I had seen a single bird near the same place on the seventh of the preceding March.

May 20, 1912, a gallinule was observed quietly swimming in a pond at the edge of a dense patch of tules in one of the numerous salt grass pastures six miles southwest of Fresno.

This species is known to breed in the swampy overflowed region near Firebaugh.

COOT. *Fulica americana* Gmelin.

An abundant resident in suitable places throughout the valley. All the overflow land south of Wheatville, the swamps and sloughs along the west side, and the smaller tule-bordered ponds nearer the city seem to be equally suitable.

A local gun club that has its preserve in Merced County frequently holds a "mudhen shoot" at the opening of the duck season, and the members report having killed as many as five thousand coots in a day.

This bird sometimes strays away from water and seems to become confused

rather easily. Late one summer a mud-hen was found in a peach orchard two or three miles from any water and as it seemed unable to take wing from a ground start it was easily captured. When thrown into the air its flight was rapid and strong but hardly graceful.

This species must begin nesting rather early in favorable seasons as young birds have been seen as early as the first week in April.

May 30, 1912, a Coot was seen occupying a floating nest on a comparatively open sheet of water near Firebaugh. No doubt there were many others nesting in the cat-tails nearby, but this bird was living in a houseboat that was visible from any direction. Had this ark been untenanted it might have passed for one of the many bits of floating drift and dry tules, but with a large bluish bird, with a distinctly white bill, perched upon it there was no mistaking it even at a distance.

In spite of their clumsy ugliness mudhens are interesting creatures, especially when they assemble to feed, like chickens, upon the grass, sometimes at some distance from their favorite pond. It is their voracious appetites that have led to their downfall, however; for the hunters claim that the grain placed about ponds to entice ducks and geese is devoured by the hungry coots, and for that reason a reduction in the numbers of the mudhen host often seems desirable from the sportsman's point of view.

NORTHERN PHALAROPE. *Lobipes lobatus* (Linnaeus).

While there seems little reason to doubt the more or less frequent occurrence of phalaropes in favorable places in the valley during migrations, yet the writer has observed but a single bird and that one was noticed so late as May 20, 1912. On that date I was looking through a colony of nesting stilts in a salt-grass pasture near a pond six miles southwest of Fresno. A phalarope was swimming about most unconcernedly in a neck of the pond. Naturally I watched him with much interest and finally walked up to within less than thirty feet of him when he flew a short distance and again settled on the water not far away. Later in the day I happened to be passing the same place but the bird was not to be seen. No doubt this was just a hungry migrant that had stopped over for a few hours to feed in so attractive a pond.

It may seem like a dangerous proceeding for one confessedly unfamiliar with this class of birds to name the species from merely seeing a single individual; but in this case the bird was clearly seen and carefully compared with the book descriptions.

AVOCET. *Recurvirostra americana* Gmelin. •

Shallow, muddy, alkaline ponds surrounded by rolling, salt-grass prairie, seem to exactly suit the requirements of this wader, and these conditions are met with at many points along the western part of the county from Wheatville to Mendota. Mr. J. H. Pierson of this city observed a number of avocets near the latter place on May 27, 1911, sitting on their eggs. They were nesting on little islands that stood a few inches above the water. At other places they nest on the bare ground among the patches of salt grass.

April 6, 1906, seven pairs of "yellow snipes," as the ranchers often call them, were observed in the shallow water at the Artesian Lake. Their subdued cry, not

unlike a whistle, was heard before the birds were seen. This note was uttered unceasingly as the birds stepped about, bowed, and continually dipped their bills into the water. One of these birds was still in his winter dress and looked almost like an albino, in rather striking contrast to the other thirteen which had assumed their full breeding plumage; but the odd bird appeared to be enjoying the sport as much as any of them.

I have always thought that this species showed a marked preference for the most stagnant and uninviting ponds. Several such places that the writer occasionally visits are to be found a few miles south of Caruthers, and although the water is sometimes so foul as to be almost black yet the Avocets gather there in some numbers. About the borders of these ponds may sometimes be found myriads of flies that seem to be attracted by some substance floating just at the water's edge. It seems not improbable that these flies form one of the staple articles of diet for the Avocets at this season.

I have mentioned the, to me, remarkable instance of Avocets being seen on their nests while the observer drove past in an auto; but I have never been able, by any strategy, to discover an Avocet upon her nest, except in just one instance. On this occasion I concealed myself in a ditch and waited until with the aid of a glass a bird was finally seen to go to her nest. Three others that appeared to have resumed the duties of incubation were found to be sitting on the bare ground their fears having evidently not been entirely allayed. In fact I know of no birds whose nests are so hard to discover.

Always on the alert it is nothing unusual for one of these big fellows to come out to meet the naturalist before he has approached to within a half-mile of a nesting colony. The presence of a man anywhere within two hundred yards is sure to call out half a dozen angry birds that fly over with peculiar stiff flight, and with long bill pointing in one direction and the still longer legs stretched out full-length in the opposite. "Pleek, pleek, pleek," they scream as they dart at an intruder in a most threatening manner.

Near Firebaugh on May 30, 1912, I found Avocets and Stilts nesting near a large, shallow, muddy pond near the railroad, and it was there that the one instance of an Avocet being seen on her nest was noted. Nests of Stilts vary wonderfully in amount and variety of nesting material used; but our Avocets seem to have adopted one style of architecture almost exclusively. The typical nest is little more than a shallow depression in the earth with no lining whatever *under* the eggs but with quite a substantial rim *around* them so that it may be said to resemble a large, loosely built, and much flattened blackbird's nest with the bottom removed. One is given the impression that this nest might have been hastily woven together, carried for some distance and set down over the four large pointed eggs with the idea of fencing them in rather than of affording a comfortable nest for the young.

Sometimes the great clay-colored eggs are so plastered with mud from the feet of the sitting bird as to resemble clods of earth. While this is probably not an act of precaution on the part of the birds yet it certainly serves to make the nests much more inconspicuous.

BLACK-NECKED STILT. *Himantopus mexicanus* (Müller).

To every true lover of birds there comes, at some time during the first six

months of the year, a flood tide of enthusiasm that usually presages a red-letter day in the fields or woods. To some this comes when February gives us a succession of warm sunny days, and sooner or later a trip for Horned Owl's eggs is the result. Others may ward off February's magic spell only to go tramping away some blustery March morning in search of the aerie of a pair of Golden Eagles. Others still find an irresistible impulse drawing them away toward the hills just when the blossoming oaks suggest Bush-tits' nests or the glimpse of some rare migrant warbler. Thus we all have our favorite and the writer, who has often spent the first four months in oölogical idleness, suddenly in May falls a victim to that intangible something that draws men away from the cares and responsibilities of a business world.

Imagine a salt-grass pasture, a pond shimmering in the distance, the odor of alkali weeds, and half a dozen long-legged, black and white waders. Not an attractive scene the uninitiated would say, especially when viewed from a dusty roadside with the summer sun beating down mercilessly; yet the most pleasant days in my whole experience as a bird student have been spent around some such place.

The Black-necked Stilts arrive in the vicinity of Fresno about the middle of April, although the date of arrival seems to vary somewhat, and the first of that month in some seasons would find the birds already on hand. It is quite probable that certain pairs are either very tardy migrants or for some reason delay their nesting until long after the majority of the Stilts have begun to assume family cares. One season when in several colonies the date for complete sets of fresh eggs was about May 20, I was very certain that no Stilts were nesting about two ponds that I frequently visited. I was therefore considerably surprised to find a colony in possession of each of these ponds in Mid-June, the 13th to be exact, and a number of nests contained fresh eggs. This, however, is not sufficient proof of retarded migration in view of the fact that in some colonies where nesting began early a few birds could still be found that were incubating eggs up to the first of July. At this time large young were in evidence some of which were not distinguishable from their parents at a little distance. Unless in some manner molested I think it unlikely that more than one set of eggs is laid each spring, but I am convinced that in not a few cases the birds are compelled to make a second, and perhaps a third, attempt before they succeed in raising a brood.

As these nesting colonies of Stilts are invariably in pastures with cattle tramping everywhere over the fields, it seems almost a miracle that any of the eggs escape being destroyed; and yet I have not one iota of positive proof of such a disaster ever overtaking a Stilt's nest, while in many instances I have known the eggs to hatch safely almost under the feet of stock. It is known that few animals will purposely step on any living object of a size large enough to be noticed, and the writer is convinced that a Stilt simply remains on her nest and by her vociferousness and possibly even with a few vigorous thrusts of her long bill causes a grazing cow to direct her course away from the nest.

A lack of judgment causes many nests to be abandoned each year, and a colony of Stilts that are not able to distinguish between a permanent pond and one that has been caused by irrigation is liable to find that by the time sets of

eggs are complete the water has disappeared and a new nesting site must be chosen. Fortunately the larger colonies always seem to be located near the permanent ponds, but there are numerous scattering pairs that are deceived each summer.

Nesting colonies of these waders in the Fresno district are never very large, consisting of from six to twenty pairs, as a rule, the most extensive one of which I have any knowledge containing an average of about thirty pairs each season. Possibly the numerous small ponds will not support a great many birds, and as suitable pastures abound in certain sections it is not a difficult matter for all the birds to be accommodated without any crowding.

It is not an easy task to define the exact summer range of this species in the valley, as everything depends upon the presence of water. A winter of excessive rainfall, or a very dry one, may bring about results entirely unlike what would be found the spring following a season of normal rainfall. It may be said, however, that this species does not show such a decided preference for stagnant alkaline ponds as does the Avocet, and although a few Stilts are usually to be found with the Avocets in such places, the smaller birds are often found around the fresh water pools also, where their larger relatives are seldom seen.

Vineyards and orchards are for the most part shunned, as is shown by the fact that I have only two or three records for the country northeast of Fresno. One of these was a single bird that was seen flying over the vineyards near Clovis on April 30, 1905. The 16th of the following May a friend reported having seen three pairs of Stilts near Little Dry Creek, north of Clovis, and well into the foothills. In general, however, it may be said that this species is to be looked for wherever open treeless pastures with shallow ponds or sloughs are to be found, with an unmistakable preference at all times for the areas that are thickly carpeted with Bermuda grass. It has been known to breed near the Artesian Lake, along some of the sloughs and irrigation ponds near Wheatville, in the vicinity of Mendota, and from Firebaugh to Los Baños in a number of places. All through the pasture lands southwest of Fresno a few miles, the Stilts are common and sometimes abundant summer visitants.

I have often been surprised at the great diversity of nesting sites, even in the same colony, it being not an unusual occurrence to find nests entirely surrounded by water—little islands of mud and sticks often built up out of water several inches deep. Not less common are the platforms of dried grass placed just at the water's edge, or the slight excavations that, Killdeer-like, are placed on the bare ground a hundred yards or more from the nearest water.

In one colony the majority of the nests were built on a levee that extended through the pond and were so near the waters edge that, although most of the nests were quite elaborate platforms of dry grass and twigs, the lower parts of the eggs were wet. Undoubtedly a high wind would have caused the wavelets to break over the levee. At this same place there were several nests far out on the open dry ground without even a spear of grass for concealment or protection, and with hardly a vestige of nesting material under the eggs.

At one pond where two pairs had taken up summer quarters there was one nest on the bare black ground where the white breast of the sitting female was the most conspicuous object imaginable and could be seen at a glance from a dis-

tance of three or four hundred feet. In direct contract was the other nest; for it was artfully hidden among the rather rank salt-grass some distance from the pond, and when the sitting bird flattened herself upon it, as is the custom of this species when endeavoring to escape observation, she might have readily been overlooked from any nearby point.

The actions of different pairs of Stilts when their nesting colonies are invaded are also variable. Sometimes a flock of noisy screeching birds will press close about the intruder, some hanging in the air on rapidly beating wings, others bouncing along the ground by leaps and bounds, raising and lowering their wings continually; while others go through every conceivable motion both on the ground and in the air. It seems that the larger the colony the more demonstrative the birds are; for in several instances where only one or two pairs were breeding the female would sneak from the nest in a guilty manner and quietly join her mate on the opposite side of the pond, where they would remain almost motionless or feed nervously along the margin of the pond.

In all the nests I have examined I have never found an unquestionably complete set of more or less than four eggs. I have been impressed with the fact that nearly every set has three eggs that are very similar in size, shape, or coloration, while the fourth egg differs greatly in one or sometimes all these points. This seems to suggest that possibly at one time the Stilts, or their ancestors, laid but three eggs, as some of the plovers do at the present time, the addition of the fourth egg being perhaps an accomplishment acquired at a more recent date.

I know of no other eggs that show such great variation in shape, size, and markings; the ground color varies from a delicate pale green to a rich buff, while the markings almost defy description being sometimes in the shape of small spots and again appearing as large irregular blotches with every possible intermediate type.

As the Stilts are seldom hunted and have very few natural enemies they do not appear to have decreased in numbers and should be able to hold their own for many years to come. Among the farmers the name "jack snipe" is usually applied to this species.

As these lines are written the nesting season has closed. Soon will the Stilts be making the journey to their winter home; but they will leave me three priceless gifts, two of which I may share with my friends, but the other, selfishly, I must keep to myself alone.

The pointed eggs, so curiously scrawled and blotched with brown and black, that nestle in a tray in my cabinet afford undoubted evidence of the nesting of this species and will be viewed with interest and profit by the friends who call from time to time to discuss things ornithological. Then, too, the field notes that have been taken show many side lights on the life history of this most interesting species. These notes can be published abroad and those naturalists whose lot is not cast in a region inhabited by Stilts may read something of their habits. The best gift of all, however, I cannot share with anyone. For graven indelibly on the tablets of memory, yet illegible to anyone else, are the recollections of many pleasant moments spent with my favorite birds; and through the long winter evenings I shall at times catch fleeting glimpses of twinkling ponds, of

salt-grass pastures with cattle standing in the shade of the lone cottonwood in the fence corner. I shall drink in the odor of salt grass and see again the long-legged, black and white waders that alone can make the scene complete.

I am looking forward even now to that day next spring when I can return from my day's work and triumphantly announce to the folks at home, "Our friends, the Stilts, have come!"

WILSON SNIPE. *Gallinago delicata* (Ord).

This bird appears to be not uncommon in suitable places in winter. Specimens sometimes find their way to a local taxidermist's establishment where they afterwards appear, standing on a board, and with a calm trustful expression survey the other specimens. To see them thus one would doubt that they could be the same species of which the writer once tried so hard to secure a specimen.

December 5, 1905, while driving along near Clovis my two companions and myself observed a pair of these waders poking about in some tules in a muddy ditch. When one of the boys approached the birds they separated and arose with a derisive "scaip," only to settle a few hundred feet away. This pair, at least, seemed in no danger so far as our party was concerned and as our supply of ammunition was not inexhaustible we finally drove on, none the richer in anything but experience.

Around the shallow ponds on the sewer farm these birds are often in evidence, especially late in the evening. They prefer to poke about in the salt-grass just at the margin of a pond, and when so occupied are not easily seen. Often the startling "squa-aik" as the bird twists away with strong, quick flight, is the first intimation that we have of the snipe's presence, and frequently the little brown wader is not the most surprised of the two when such a chance meeting takes place.

LEAST SANDPIPER. *Pisobia minutilla* (Vieillot).

Least Sandpipers appear in late September or the first half of October, and are found in flocks of from ten to thirty or more throughout the winter, departing about the middle of April. This species is to be looked for around the shallow, muddy ponds that occupy many of the low swales in the western half of the district. Stagnant alkaline ponds are at all times preferred as feeding grounds. I was greatly surprised on one occasion to hear a farm hand refer to these tiny waders as "jack snipes." I had always supposed that the Stilts held undisputed possession of that name.

Although so small these sandpipers are most interesting little sprites. They are usually to be seen running along over the mud at the water's edge, or, taking flight, they wheel and circle in a compact body.

GREATER YELLOW-LEGS. *Totanus melanoleucus* (Gmelin).

The writer has observed this species but once and that in a small swampy area near Clovis during a heavy downpour, March 30, 1904. One bird flew from near the roadside at my approach and alighted near another that I had not previously seen. Just as it settled to the ground the wings were held above the bird until their tips appeared to touch. As the two birds walked they were continually dipping and bobbing their heads.

Miss Wear reports seeing this species, together with what was thought to be the Lesser Yellow-legs, in some shallow ponds on Fig Avenue in April, 1909; and April 17, 1910, *melanoleucus* was observed near the same place.

LONG-BILLED CURLEW. *Numenius americanus* Bechstein.

On the plains between McMullin and the Artesian Lake this splendid bird is to be found in small numbers through the winter. November 29, 1904, during a dense fog I several times heard the melodious, inspiring whistle of this great wader and in the next few days three or four flocks of eight to ten birds each were seen; but they were so wild that a close approach was impossible.

Mr. Joseph Sloanaker informed me that curlews were present in the vicinity of Raisin during the winter of 1910-11, and that they could be approached in a buggy to within forty or fifty yards when a man on foot could not get nearer than twice that distance.

HUDSONIAN CURLEW. *Numenius hudsonicus* Latham.

Hudsonian Curlews are regular spring migrants in suitable places along the western half of the valley. They arrive in small numbers late in February and become more numerous a month later.

Their favorite resorts are large open fields where shallow ponds occur, and in such places they often gather in large numbers. I have no definite record of this species remaining in spring later than May 7 (1912), but have no doubt that a few remain much longer during certain seasons.

There are no birds with which I am acquainted that can compare with these splendid waders in the rich musical quality of their voices. On the last day of one April I encountered a large flock of curlews in a grain field, part of which was being flooded at the time with irrigation water. In one place there was an area of probably five acres that was covered with water to a depth of several inches. The surrounding higher ground supported a considerable growth of stubble left standing from the harvest of the preceding summer. Approaching to within sixty yards of the big fellows as they stood bunched at the water's edge, I concealed myself as best I could and enjoyed an opportunity to become better acquainted with those most interesting birds. The nervous lisps that at my approach threatened to break into the clamorous, screaming flight calls finally subsided and the birds fed and waded about in the water or preened their feathers while standing stork-like on one leg. Suddenly I was thrilled with a medley of subdued pipings so marvelously sweet and musical that I could hardly believe the sound came from my flock of curlews. The faintest whispering it seemed, yet the liquid melody was really far-reaching and was, as I afterwards learned, distinctly audible from a distance of a quarter of a mile when atmospheric conditions were favorable. A strange nervous unrest seemed to affect the entire group on the ground. The whistlings became louder and the cause was suddenly revealed to me when a curlew call from overhead drew my attention to a flock of new arrivals, nine in number, that were circling preparatory to joining the company at the pond. My surprise and admiration knew no bounds when I realized the sublime heights at which these travellers through the sky had been flying. Mere specks they appeared, and yet their melodious call rang clear and distinct.

It seems possible that Nature has endowed some of her children with a sense unknown to us by which certain creatures can detect the presence of others of their kind at great distances. It seems that eyesight alone could hardly be sufficient to reveal to a flock of birds poking about in the mud the approach of others at a distance so great as to be almost undiscernible to human eyes, even when their location had been fairly well determined by the splendid call notes. However, time and again I have heard this subdued piping and in every case a new flock of birds appeared, although in some instances it was nearly a minute before the newcomers could be located. The Sandhill Cranes sometimes fly at astonishing heights during the spring migrations, but I think it not unlikely that many flocks of curlews pass over so far above the earth as to be entirely invisible.

There is a wild and not unmusical tone in the clamorings of a frightened flock of these birds as they fly from a real or supposed danger, the big assemblages breaking up into small squads that scatter in all directions. There is also a most attractive quality in the inspiring whistle of a single individual as he takes flight from a shallow slough where he has been feeding. To the writer there is nothing in all the bird world so musical as the excited yet subdued whisperings of the Hudsonian Curlews when a new company of fellow travellers have been sighted.

It must not be supposed that these birds spend their entire time around water; for small groups of from six to twelve or more individuals are often encountered out in dry fields or pastures some distance from any water. Yet the trysting pond is sure to be not many miles away, and at any time the little groups are liable to cease feeding operations and betake themselves to the place of assembling.

At first thought it seems regrettable that these birds should nest in the far north and therefore be with us for only a few weeks in spring on their northward journey. Yet it is probably best that it is so: for there are many people in California who assert that curlews make excellent birds for the table and no doubt many would perish by the shotgun if the birds were to be found here throughout the year. May their numbers never grow less and their marvelously sweet voices never be hushed!

KILLDEER. *Oxyechus vociferus* (Linnaeus).

The Killdeer may be considered a common resident throughout the Fresno district, and while it shows a decided preference for the vicinity of water it is not confined to such places and is often met with in dry, open fields. In the early spring it is often seen about puddles along the roads, and in the fall when the birds become restless and fly from place to place, their call can often be heard at night, especially in moonlight.

The Killdeer is a very early nester with us and large young have been seen as early as April 4. April 18, 1906, three eggs were found in a vineyard, two on a narrow ridge left in plowing and a third in the furrow below. By some chance this nest had been built exactly in line with the young vines so that in plowing only one side of the nest was disturbed and two eggs remained almost balanced on the knife-like ridge. The nest had been deserted for some time, evidently, and as the eggs had been almost ready to hatch at the time they were abandoned, it seemed like a case of early nesting. So the owner of the land was hunted up to furnish, if possible, the date when the land was plowed. He in-

formed me that he was not certain of the exact day but that the fifteenth day of March would not miss it more than a day or two. If this particular set of eggs was almost complete in incubation by the middle of March it must have been deposited during the last days in February or the first in March. Other nesting dates are given in the following table:

Date	Number of Eggs in Set	Incubation
June 28 1906.....	4	Advanced
May 4 1907.....	2	Fresh
June 27 1907.....	4	Begun
May 4 1908.....	4	Well along
March 20 1909.....	4	Half incubated
March 15 1910.....	4	Nearly fresh
March 25 1910.....	4	Small embryos

A typical nest throughout the cultivated sections is composed of a handful of white pebbles about the size of peas and very uniform in size, mixed with an almost equal number of dry shells of melon seeds of the previous year. Frequently a few dry, broken-up pieces of melon stems are used also, the whole being spread out over a space the size of a saucer, with the eggs resting in the center. As the result of coming in contact with a sharp rock that sometimes finds its way to the nest in place of the usual smooth ones the eggs occasionally show small gravel punctures.

On the summer-fallow fields only a few dry grass blades line the place where the eggs rest, while around the ponds of the west side the eggs generally lie half covered in the powdered alkali dust without a scrap of nest lining.

MOUNTAIN PLOVER. *Podasocys montanus* (Townsend).

The Mountain Plover is a not uncommon winter visitant in suitable places on the west side plains. Its preference, seemingly, is for the open pasture lands, and it is seldom found in the bushy areas, as is the Long-billed Curlew. The presence or lack of water seems to make very little difference to this plover so long as there is a large open field near at hand. The birds feed in large, loose flocks, running ahead of an intruder and only flying when too closely pressed.

December 3, 1904, there was a very large number of these birds near the roadside between the Artesian Lake and New Hope. Mr. Joseph Sloanaker reports them as common near Raisin during the winter of 1910-11, and the writer has a specimen from there, taken November 26, 1910.

PLUMED QUAIL. *Oreortyx picta plumifera* (Gould).

This splendid bird is known to sportsmen and campers universally as "Mountain Quail". While a resident of the higher Sierras, it has been known, during very severe storms in the mountains, to come down almost to the plains. It has been definitely reported from near Centerville, and it is on this record that the species has been given a place on this list.

VALLEY QUAIL. *Lophortyx californica vallicola* (Ridgway).

There is no bird in Fresno County, not even excepting the Mockingbird, that is so well known to all classes as is this one. It is known everywhere to

sportsmen, agriculturists, tourists, and the city dweller, as "quail", without any descriptive or qualifying prefix.

Formerly a resident of the foothills, it is very fortunate for the future welfare of the species that it early learned of the protection afforded by the large vineyards now so numerous throughout the valley. For many years it has been so thoroughly established in these cultivated areas that we may expect it, under the present excellent game laws, not only to hold its own in such places but actually to increase, while those individuals that choose to remain in their original habitat seem to be gradually diminishing in numbers. The reasons for this are evident when we consider that the majority of vineyardists consider the quail a beneficial bird, and absolutely forbid shooting on their land. This fact, together with the abundant food supply, safe retreats in which to nest, and, last but by no means least, the dangers from hawks and predaceous mammals reduced to a minimum, makes the struggle for existence here much less severe than in the hills.

Another place in the county must be mentioned where the bird is to be found, and where it would hardly be expected to occur. In the swampy areas around Wheatville and Riverdale, where rank grass and willow-lined sloughs seem to suggest Green Herons and blackbirds, the quail finds a not less pleasant home.

While driving along a nearly submerged road near Wheatville, July 13, 1911, a quail flew from a willow, and whizzing out over the water alighted in a clump of marsh grass. Black Terns were calling nearby, and the numerous Blue Herons standing hip deep in the overflowed alfalfa fields made a scene suggestive of anything but quail.

As a destroyer of various caterpillars and ants the quail takes high rank, and a flock of these birds about a vineyard or orchard is of inestimable value in reducing the number of bugs. Fortunately this fact is recognized by many farmers and fruit growers although we hear an occasional complaint of the grapes being picked open and raisins scattered from the trays by the quail. The cutworms, which cause such havoc to the vines at times, are eagerly sought for, and the little hollows scratched at the bases of vines, so often to be seen in spring are evidences of the work of this, our proverbial "early bird".

Besides a diet of insects, this quail is very fond of seeds and grain, and in late autumn birds are often seen with crops crammed to their full capacity with various weed seeds.

In March or early April the large flocks of quail break up, and pairs are to be seen running across the roads, investigating gardens and berry patches, and calling cheerily as they search for nesting sites. At this time they become much more fearless, often coming almost to the doorsteps of dwellings. About this time a rather curious trait becomes noticeable, that of dropping eggs indiscriminately on the ground. So common is this habit that a walk through a field or vineyard frequented by quail is almost sure to reveal one or more of these eggs lying on the bare ground, and through the month of April the author has often picked up half a dozen of them. The most reasonable theory to account for this, it seems to me, is to be inferred from the fact that our quail prefer for a nesting site, more than anything else, the shade of a large grape vine the foliage of which extends to the ground and affords a cool retreat where they can nest in comparative security. At the time eggs are found scattered about, the grape

vines have not attained sufficient growth to be of much value for concealment, and probably the birds prefer to wait until such a time before preparing nests in which to deposit their eggs.

Besides concealing their nests under vines quail sometimes choose grain fields, alfalfa-grown lowlands, and weeds along ditches, as places in which to hatch their young. Occasionally strange sites are selected, and one pair was found that had sixteen eggs neatly hidden in a pocket in the side of a haystack; another nest was found concealed under a clod in a field. They are even said to nest, at times, on a bunch of leaves or an old jay's nest in a willow, sometimes at a considerable elevation. The nesting period is from early May through July. Although no little time is occupied in depositing the large number of eggs, yet the actual work of preparing the nest is probably of small moment, as a slight hollow scratched in the ground seems sufficient. Often this hollow is lined with dry grass, leaves, or feathers, but sometimes only a few straws are used; in such cases eggs may be partly buried in the soft dry earth.

The smallest number of eggs that I have ever observed in a nest was a set of ten; but as the nest was found in late July it was no doubt a second set. One nest was found on May 16, 1902, with twenty-two eggs, and another on June 2, 1907, with twenty-one. Sets of from fifteen to seventeen are most common.

I am not yet willing to agree that all large sets of quail eggs are the result of two females using the same nest; but in one instance that came under my observation this must have been the case. April 19, 1907, a nest was found just before noon with four eggs, and while passing the place late in the afternoon I looked into the nest and found six eggs. After that the set increased only one egg each day, but the two eggs appearing in the afternoon rather upset a theory I had held as to quail always depositing their eggs early in the morning. So far as I have been able to learn, the period of incubation is, approximately, twenty-one days.

The manner in which a dozen or more young quail can disappear before the very eyes of an observer seems almost uncanny, and it requires no little searching to discover one of the little fellows hidden under a dead leaf or tuft of grass.

Many a dull, foggy, winter morning is made more cheerful by the call of this bird as a little flock runs through the vineyards, their feet pattering over the leaves like raindrops. In the twilight of a summer evening the same call floats cheerily up to us from the alfalfa field, just as the birds whirr away to their roost in the tall blue-gums near the barnyard.

BAND-TAILED PIGEON. *Columba fasciata fasciata* Say.

This is another bird of the mountains, that comes to us only at long intervals and then always in winter. Hunters inform me that these pigeons were very numerous in the valley all of one winter in the late nineties. One man tells me that they fed in large flocks on barley fields near Riverdale, and that they showed no great fear, always returning in a short time to the same field, even after being shot at persistently. When too frequently disturbed they often perched for a short time in some tall leafless willows, to fly again to the fields where they fed. This same hunter kept one wing-tipped bird in captivity for several weeks.

WESTERN MOURNING DOVE. *Zenaidura macroura marginella* (Woodhouse).

What wonderful opportunities are sometimes overlooked, and how often we fail to appreciate the efforts of our best friends until it is all but too late!

Had the farmers and fruit growers of central California realized the value of the dove as a destroyer of weed seeds it is probable that a law would have been passed years ago removing it forever from the list of California game birds. What a pity that some of those who should have been loudest in urging protection for the doves have remained silent, allowing the slaughter of these birds to go on year after year during July and August, just at the height of the nesting season. Many a late-summer nest has the author looked into, and from the broken or dried up egg shells, and often from the shriveled remains of two tiny, downy creatures, read a pitiful tale of cruelty, starvation, and death; and all to satisfy the lust for killing by that class of hunters who must have something at which to shoot.

It has remained for our Fish and Game Commission, backed by true sportsmen and other interested parties to remedy this evil by dividing the State into districts with seasons arranged to meet local conditions. I have been informed that the departure of doves from the northern portion of the state occurs annually in August; so that the northern sportsmen claimed that unless allowed to shoot during that month they would be denied the privilege of dove-shooting altogether. Thus we see the fallacy of a uniform law for a whole state of the size, and with the diversified conditions, of California.

Under the present arrangement the birds are protected in this, the fourth district, until September first, and shooting is limited to that month and the following one. Personally the writer is convinced that October first would be a still better date for the opening of the season, from the birds' standpoint at least; but such a victory has been gained in extending protection through July and August that we must be willing to concede a few points.

As a destroyer of noxious weed seeds the dove takes first rank, and during the summer and fall months these birds are to be looked for, when not engaged with household cares, in clumps of sun-flowers growing in fence corners and along ditches, in the patches of mullein that often carpet summer-fallow fields in this region, and wherever seed bearing weeds are allowed to grow on waste ground. Doubtless the shade and protection afforded in such places are added attractions; but the fact remains that several birds examined had crops distended to their utmost capacity with small seeds, showing that they had not been idle.

The number of seeds eaten by even a single dove in one year's time must be almost incredible, and, leaving out the question of sentiment altogether, the dove's usefulness alone is sufficient reason for protecting it at all times.

That the species has decreased somewhat during the past ten years can hardly be denied, yet at present it is in no danger of extermination, and with the laws now in force may be expected to increase in numbers from year to year.

The Mourning Dove is an abundant resident over the floor of the valley, finding conditions suited to its requirements not only on the large grain ranches but everywhere in the more highly cultivated fruit districts as well. During the nesting season the birds are scattered over the country in pairs, but often nest so numerously in the willows along certain canals as to appear to be nesting in col-

onies. Late in the fall they congregate in flocks, often of large size, and spend the winter in such companies, flying from one field to another when disturbed. At this time they frequently become quite unapproachable, a characteristic that is not easily understood when we consider their fearlessness all through the breeding season and even after shooting has commenced. The doves almost seem to feel that man should be their protector, and not until countless dozens of their number have been slain are they convinced that their confidence has been betrayed; but when once the lesson is learned the birds cannot in any way be won back to friendliness until the approach of another nuptial season.

The cooing notes that presage the nest-building time are generally first heard in this vicinity during February. In 1906 the date was the 26th, while the next year they were twenty-two days earlier. The present year (1911) they were late again, and they were not heard until February 22.

In selecting a site for their nest a pair of doves does not seem to be governed either by the proximity to food supply, water, or any other condition, so far as I can determine. As previously suggested they nest in greatest numbers, perhaps, in the willows that border nearly every irrigation ditch, but this may be accounted for from the fact that these trees constitute practically the only timber in many places. Although the species nests commonly on the ground, yet it probably has learned that elevated nests are less liable to be disturbed. Various situations are chosen in these willows, but most often the nest is placed on a large horizontal branch from one to thirty feet above the ground, while in some instances they choose the topmost branches, fully forty feet up.

Peach trees in orchards and fig trees that grow along the roadside in front of vineyards are commonly selected, while almost any kind of a tree is liable to be appropriated at times. The average height is from six to ten feet from the ground.

While walking through a wheat field near New Hope one morning in April, I flushed three doves, each from a nest on the ground among the wheat, which was at that time only a few inches high and far too thin to conceal the bird on the nest. Numerous nests have been found on the ground in the vicinity of Clovis, some at the base of grape vines, others in alfalfa fields or among weeds. These ground nests consist of a very few straws which, in many cases, do not prevent the eggs or young from coming into direct contact with the ground; it is possible that the warm earth assists in incubation. Nests in trees vary from slight saucer-shaped affairs, scarcely sufficient to hold the eggs, to elaborate masses of rootlets and dry grass stems.

The earliest date upon which I have ever observed an occupied dove's nest was March 30 (1907), when two half-grown young birds were found. Several nests with perfectly fresh eggs have come under my notice as late as the first week in September.

Two, and probably often three, broods are raised, the first early in April and the others at any time up to the last of August. After examining hundreds of doves' nests the author can record only two in which the complement of eggs was more or less than two. One of these was a set of three noticed on May 31, 1902, but in this case I felt certain that the extra egg had been deposited by a second female, as it was somewhat smaller, more pointed, and of a shade so unlike

the others that there appeared to be a difference in shell texture. April 22, 1908, a dove was found occupying what was undoubtedly the remains of an old, abandoned nest of a mockingbird relined with just a few dry, brown rootlets, upon which rested a single egg far advanced in incubation, as was evidenced by its dark color. There was nothing to indicate that a second egg had ever been deposited, and the unusual depth of that nest seemed to preclude the possibility of an egg having rolled out, so that it is probable that in that case only a single egg was ever produced.

The dove, whether observed walking quietly across the road in the soft light of early morning, dropping into a canyon to drink from a water hole, or swiftly winging its way to roost in the willow fringe along some canal, always displays a quiet grace of manner that makes it an attractive bird under all conditions, and one that it seems a pity to kill for the small morsel of flesh it affords, or for the mere pleasure of shooting something.

CALIFORNIA CONDOR. *Gymnogyps californianus* (Shaw).

This great bird was no doubt common at one time on the plains along the western side of the county; but that day has passed, probably forever. Residents of the district along the eastern slopes of the Coast Range mountains and on the plains inform me that even yet one of these birds is sometimes seen, but the species must be considered very rare at the present time.

Personally, the author has seen just one Condor in Fresno County and that was during July, 1900. This was while I was staying for a few days at a ranch house some six or eight miles north of Wheatville. The Condor flew over at a distance of at least three hundred yards above the earth; but a familiarity with this bird's appearance, gained among the Tehachapi Mountains during boyhood days, rendered it recognizable at a glance. Upon calling the attention of a man who was working nearby, to the Condor, he informed me that it was "a vulture but not a turkey buzzard". He also stated that one had been shot near there during the preceding winter.

Miss Winifred Wear tells of seeing, near Friant, as late as last March (1911) what she was certain could have been nothing less than a Condor. The bird was perched on the ground near the railroad and took wing at the approach of the train. This record would place the bird well into the Sierra Nevada foothills.

TURKEY VULTURE. *Cathartes aura septentrionalis* Wied.

Of all the birds that I have ever had the privilege of observing none has interested me more than the Turkey Vulture. There are many questions concerning him that I have never been able to answer. As he pursues his way silently over hills and fields there seems a sort of mystery about his very silence.

There are records of the occurrence of this species during every month of the year, but they are noticeably scarce during December and January. My records for those two months show that buzzards were nearly always seen during stormy weather and especially during showers. Possibly this may be accounted for by the fact that in rainy weather the buzzard prefers, or is compelled, to fly near the ground and thus becomes more conspicuous.

There are three places in this part of the state where Turkey Vultures are

said to breed, but circumstances have never permitted me to visit any of them. A few miles west of Friant there is a high chain of very rocky ledges extending for several miles almost parallel to the San Joaquin River. I have been told of a young vulture being found at the foot of one of these hills some years ago, and as it was unable to fly more than a short distance it was no doubt hatched somewhere in the rocks above. Mr. Chas. E. Jenney tells of exploring caves that were strewn with bones of small mammals, and containing other evidence of having been occupied by vultures. Although these hills are on the west side of the river, and therefore in Madera County, they are included in this list as they are visible for some miles in Fresno County and within a short distance of one of my favorite collecting grounds.

Above Academy the hills, for a mile or two along the wagon road, are very steep and rocky, with numerous rather small oaks. An ornithologist from the southern part of the state upon seeing those hills exclaimed, "My! what a place for turkey buzzards." In *The Oologist* for April, 1908, is a view taken by Mr. G. A. Abbott in the Aransas Pass region of Texas, which is not at all unlike some of the country above Academy, and I believe it would be possible to secure one or two views that would bear a marked similarity to Mr. Abbott's splendid illustration. On the 18th of May, 1908, I camped in one of these canyons, and was much interested just after sunset in watching the vultures that appeared from somewhere above and began circling about the higher hills, until finally, as darkness came on, nearly three dozen of the big fellows settled down into the canyon to roost in some tall sycamores.

Rumors have come to me at times of eggs having been found among the rough, sun-scorched gullies along the eastern base of the Coast Range mountains, near the outlet of Panoche Creek, thirty miles or more west of Fresno. All three of the places mentioned seem ideal for the requirements of buzzards, and I shall never be satisfied until each has been visited during the nesting period of the Turkey Vulture.

I have always been much interested each spring in the return of these birds, for most of them, apparently, spend the winter somewhere to the southward. These flights usually occur in February and last for a day at a time, and during ten years of observation the line of flight has not varied a quarter of a mile, the birds coming from a point southeast of Clovis and passing on toward the northwest in the direction of the river. A very interesting feature of these flights is that they occur, almost without exception, during a strong wind and generally at a time when a storm is just breaking up and clouds are hurrying before the gale. The surprising fact is that the flight is directly against the wind, and on one occasion when the wind varied slightly the line of flight was changed correspondingly. The only exception to this rule that I have ever noticed occurred on March 5, 1906, when the wind blew strong from the southeast and the buzzards were traveling along with it. On one occasion the wind had been blowing briskly all day but died down suddenly about four o'clock and the flight ceased almost at once.

These returning birds do not come in great flocks but trail across the sky in single file, sometimes only a few feet apart and again as far apart as one hundred yards or more. Every mile or so they pause and begin to circle around, occasion-

ally mounting higher but more often for no other purpose, seemingly, than to allow the stragglers to catch up. Sometimes these birds fly very low, tacking and flapping against the wind; at other times they sail along far above the earth.

During 1906, these flights occurred February 22, March 5, and March 17, each being a partly cloudy and very windy day, and although there had been many calm sunshiny days between, not a buzzard was seen during the intervals. On the 17th I happened to be where I had an excellent opportunity to observe them. I do not know how many had passed over before they were noticed, but I counted one hundred and fifty-four of the big fellows within the next half hour. These flights have been observed as early as the first week in February and as late as the third week in March, depending, seemingly, upon the weather.

Now, the questions that interest me most are these: Where do these particular birds spend the winter and where do they go after passing this place in the spring? Is this a general migration that extends throughout the southern and central parts of the state? If so, how far north do they go? I shall be very grateful to anyone who will answer any of these questions for me.

On October 5, 1905, I saw a large number of vultures congregating overhead at a great height, and no sooner would some of them drift away toward the south than another squad would begin to form, and this continued throughout that day and part of the next forenoon. After that date vultures were noticeably scarce, but not altogether absent, in the vicinity of Fresno. The previous year a similar exodus took place on September 21.

One windy day in March the writer was investigating some willow clumps along the San Joaquin River, and noticed a Turkey Vulture a short distance away perched on a branch of a sycamore that extended over the water. The bird had his back toward me and appeared to be asleep, so I threw a stone toward him, desiring to see what he would do if suddenly disturbed. As the missile crashed through the branches and fell with a splash into the water it produced an effect both disgusting and amusing. Without even looking around to learn the cause of such a rude awakening the vulture proceeded with all haste to unburden himself of apparently the greater portion of his last meal. At the same time he sprang into the air and flapped hurriedly out of sight down the river.

WHITE-TAILED KITE. *Elanus leucurus* (Vieillot).

The only record the author has been able to unearth of the occurrence of this bird in any part of the valley was given him by Mr. Chester Lamb, who saw one of the birds flying over the oaks near Laton, on the last Sunday in May, 1910. Upon his return from there he told of seeing the Kite and mentioned it as being the first one he had seen since the summer of 1899, when he observed the species near Palo Alto.

The region about Laton seems better adapted for this bird than any other place in the valley, and the presence of at least one bird of this species during May might indicate that it was breeding there.

MARSH HAWK. *Circus hudsonius* (Linnaeus).

Formerly this hawk was an abundant winter visitant over the lowlands almost everywhere in the valley, but, like nearly all the birds of prey, it seems unable to withstand the onward march of civilization. It has been much reduced

in numbers throughout the region and has completely disappeared from some of the more thickly settled areas.

Wherever large grain or stock ranches are to be found this bird is still common, and it occurs numerously on the uncultivated plains along the west side. Since its food consists principally of mice and gophers, with, no doubt, many large insects added, it must have broad open fields to hunt over. Any time from the first of August until the last of March these hawks may be seen skimming low over the earth, pitching suddenly to the ground to pick up some object, or perching on a knoll when a rodent is captured too large to be swallowed at once.

While it is probably not often that birds are captured, the Marsh Hawk being a comparatively slow flyer, yet the smaller birds seem to fear it greatly. One winter, while working for a few days near a half-section of stubble, I was continually reminded of this hawk's presence by the great number of doves and horned larks that were disturbed; no sooner would one flock become settled than another would fly up.

Rumors have come to me, not a few times, of the nesting of this hawk on the plains and elsewhere in this vicinity, but I have never been able to verify any of the reports. Two young men tell of finding a hawk's nest on the ground in a hay field about four miles east of Clovis some ten years ago. It contained four young birds at "haying time".

SHARP-SHINNED HAWK. *Accipiter velox* (Wilson).

The author has always maintained, and has endeavored to find proof to back up the statement, that each bird represented in the Fresno district was of some use, and that its value to the community would far offset any damage of which it might be guilty. In the case of the Sharp-shinned Hawk, however, after observing its manner of life for many winters, the only admirable thing that can be said of it is that it is a skillful, fearless hunter.

It is very doubtful if all other agencies combined are as destructive to small birds as this hawk, and the number of sparrows and other ground feeding birds that are captured is simply appalling. Skimming along low over the ground, dashing into thickets and brush piles, with a flight that is noiseless, but marvelously rapid at times, he is upon a flock of sparrows before they are aware of his presence, and seldom does he fail to capture one. If by any chance the intended victim eludes its pursuer and takes to the open in an attempt to reach another brush pile, it is surely doomed; and with a few rapid wing beats and a final swoop the little bird is carried to some place of concealment, stripped of feathers, and devoured.

The birds that appear to suffer most from this hawk around Fresno are the Mockingbird, Intermediate Sparrow, Valley Quail, and Say Phoebe, in the order mentioned. Mockingbirds are especially easy prey and apparently become paralyzed with fear when a Sharp-shinned Hawk puts in his appearance. After that they make no attempt to escape but simply crouch down and allow the hawk to pick them up. Numerous little bunches of feathers along fences, on brush piles, and in weed patches mutely tell of such tragedies. One winter the writer shot a sharp-shin that was carrying a Say Phoebe in its talons; February 18, 1911, another was killed as it flew over a willow clump with the half-eaten re-

mains of a Mockingbird; and on another occasion a quail whizzed past me with one of the little hawks in close pursuit. Unless the quail was able to reach some sort of cover into which it could dive, I am afraid it proved to be a hopeless race.

The Sharp-shinned Hawks arrive in this vicinity before the first of October and remain until the middle of April, frequenting the small blue-gum groves, willow thickets, or any other trees that afford concealment, and from which they sail forth on their missions of destruction. These hawks are especially numerous in the willows along the larger sloughs of the west side but they are quite commonly distributed throughout the entire valley.

COOPER HAWK. *Accipiter cooperi* (Bonaparte).

It is probably very fortunate that this hawk is not an abundant species in Fresno County, for with its larger size and well known powers of flight it would be even more destructive than the Sharp-shinned Hawk. The former is pretty generally, but sparingly, distributed through the low lands during the fall and winter, but during the breeding season it seems to be confined to the willow clumps along the rivers, where it nests.

March 25, 1906, while looking up data on the nesting habits of *Buteo borealis calurus*, I entered a rather thick growth of willows that line the banks of the San Joaquin River a few miles below Lane's Bridge. I was suddenly surprised by a Cooper Hawk that dashed close past me, then swept upward to join her mate, screaming shrilly as she flew about with angry demonstrations, now swooping on stiff-set wings, again beating through the air with strong rapid wing-beats. A nest that would probably have remained undiscovered but for these demonstrations was soon located about twenty-five feet up, in the forks of a single willow shoot, which, although not over six inches in diameter, had attained a height of thirty feet or more. The nest was rather large, and composed of long, dry willow twigs of quite uniform size. To all appearances it was ready for occupancy, being lined with half a dozen green willow twigs with the tender new leaves attached. An attempt to visit the nest the third week in the following April was unsuccessful as the river was very high and the willows were standing in several feet of water. April 29, 1911, while exploring the same willows a Cooper Hawk flew past me, within ten yards, but I failed to find any nest.

WESTERN RED-TAILED HAWK. *Buteo borealis calurus* Cassin.

At the present time the Western Red-Tailed Hawk is quite generally distributed throughout Fresno County, being most numerous in the foothill regions along the eastern base of the Sierras, and along the San Joaquin River. A few pairs nest in favorable places in the valley, but in the immediate vicinity of the city they are not common until the winter months. Then the species is scattered over the vineyards and orchards, and is liable to be met with almost anywhere, although it is never actually abundant.

The habit of sitting motionless on the top of a dead tree or telephone pole makes this hawk a rather conspicuous object at times, and he often pays for his prominence, for there are persons who consider it almost a crime not to shoot at a hawk whenever one is to be found.

March is the month when this hawk begins nesting, although, in favorable

seasons, an early pair may occasionally begin laying during the latter part of February. In the foothill regions the nests are often built in oak trees while in the canyons the tall sycamores are more frequently utilized. The few pairs that nest in the valley choose cottonwoods or eucalyptus for nesting sites.

March 26, 1906, the writer secured a very nicely marked set of three eggs from a nest forty-four feet up, in a large oak growing in the bed of Dry Creek, below Academy. This nest was compactly made of large, dry, oak sticks, and the lining consisted of the red inner bark of cottonwood, together with several willow twigs to which were attached some very small green leaves. The three eggs had been incubated a week or more.

Another nest with three slightly incubated eggs was found March 21, 1907, in a large sycamore, forty-six feet from the ground. There were no leaves in this nest, but several bunches of green cottonwood berries were used instead. A freshly killed meadowlark, from which nearly all the feathers had been stripped, was found in the nest with the eggs. One of the birds was occupying her home and may have been presented with this food by her mate. One nest examined April 5, 1908, had for a lining several oak twigs with very small green leaves, and the entire nest of a Bullock Oriole of the previous season's use.

Nests of this hawk, especially when built in sycamores, are sometimes placed from fifty to seventy-five feet from the ground, and are often rather difficult to examine. In no case has either of the owners ever proven very demonstrative, and their disapproval is usually expressed in the whistling scream that sounds like the words "pee-yare," which is heard as the bird flaps around nearby or perches on some neighboring tree. Personally, the writer has never found a nest of this hawk that contained a complete set of more or less than three eggs, but Mr. Chas. E. Jenney, who has been much afield along the San Joaquin River, tells me that he has found sets of four almost as common as those of three.

The only complaint that I have ever heard against the Western Red-tailed Hawk is that during the months of September and October it occasionally acquires a liking for chickens, but this is probably an individual characteristic rather than one that can be charged to the species generally. On the whole, these big hawks are of such service in destroying squirrels and gophers that they should be protected, and encouraged to nest about the farms, especially by those who can endure the loss of an occasional well-earned chicken without becoming possessed of a desire to kill the entire hawk tribe.

SWAINSON HAWK. *Buteo swainsoni* Bonaparte.

This is another of our migrant hawks, but unlike most of the others it comes to us early in the spring and departs at the close of its nesting season. I consider this hawk, next to the Barn Owl, the most beneficial bird-of-prey occurring in this district. It feeds almost exclusively upon mice and gophers, and I have yet to find anyone to complain of its taking either chickens or any kind of wild birds.

I once saw half a dozen of these hawks sitting on fence posts watching for mice. This was on a large wheat and stock ranch and not far from the ranch house. I questioned the owner of this farm and he informed me that he allowed the hawks to hunt undisturbed over his place, and that they sometimes nested

almost in his dooryard, but that he had never suffered the loss of any poultry, while the service rendered in keeping the mice and gophers in check would have repaid him for the loss of many chickens. Would there were more of that kind of farmers!

Buteo swainsoni arrives in this vicinity late in March and is common by the first of April. The birds depart in August, gathering in large flocks and moving leisurely.

This hawk nests on the west side plains, along the San Joaquin River below Lane's Bridge, and in the cottonwoods on Dry Creek, east of Clovis. For a more complete account of the habits of this bird, as observed in Fresno County, the reader is referred to *The Oologist* (xxv, no. 1, pages 9-12).

AMERICAN ROUGH-LEGGED HAWK. *Archibuteo lagopus sancti-johannis* (Gmelin).

This hawk occurs during the winter on the uncultivated plains extending from Raisin to within four miles of New Hope. Individuals have been most frequently observed near the Artesian Well, sitting on knolls and the mounds around squirrel excavations. They are rather sluggish birds, seemingly, and if undisturbed will allow a fairly close approach. When finally forced to take wing it is only to fly heavily to another eminence a short distance away. Some of the birds appear almost black. I have never seen this hawk elsewhere, and it can not be regarded as common. I have seldom observed more than one bird in sight at a time.

I have been unable to get definite information as to the dates of arrival and departure of this bird, but it is safe to say that the species is more common during November and December than at any other time.

Mr. Joseph Sloanaker presented the author with a beautiful skin of a female rough-leg, taken near Raisin on November 26, 1910. This specimen measured twenty-one inches in length. A farmer shot the hawk and brought it to Mr. Sloanaker in a crippled condition. It was kept alive for a day or two, but seeing it was not likely to survive its wounds, it was finally dispatched. This specimen has been examined by Mr. Grinnell, who verified our identification.

FERRUGINOUS ROUGH-LEGGED HAWK. *Archibuteo ferrugineus* (Lichtenstein).

This large hawk occurs in certain sections during the winter, but very little seems to be known of it locally. I should call it a rare visitant, occurring most often along the sloughs of the west side region. It prefers a more wooded country than the preceding species and hunts along the willow-bordered sloughs and over the grain fields, but seldom intrudes upon the range of *sancti-johannis*.

December 2, 1904, I examined one of these birds that was found dead near New Hope, and January 12, 1906, another that had been shot and left lying at the roadside near Clovis.

GOLDEN EAGLE. *Aquila chrysaetos* (Linnaeus).

The Golden Eagle is another resident of the mountains, but occasionally, in winter, it comes down into the valley. Mr. Chas. E. Jenney tells of having captured a sick or wounded eagle some years ago and keeping it in captivity for some time, after which it was released.

March 17, 1902, an eagle was seen soaring over the grain fields one mile

north of Clovis. January 1, 1905, another was seen two miles south of Clovis, flying from the west, and having come, no doubt, from the Sierras. November 28, 1906, another eagle was observed circling over the fields three miles south-east of Clovis, and I was told of one having been shot on the west side plains several years ago.

Specimens are occasionally brought into a local taxidermist's shop, but most of these probably come from the mountains.

BALD EAGLE. *Haliaeetus leucocephalus leucocephalus* (Linnaeus).

Only once has the author ever observed the Bald Eagle in Fresno County. On the afternoon of February 16, 1906, a splendid example flew over an orchard where I was working near Clovis. Flying at no great height he was plainly seen, but just after passing over he made a broad circle as if to allow me a better opportunity to admire his snowy head and tail, glistening like silver in the sunlight. He then swept on eastward toward the mountains.

No doubt this eagle had been following up the San Joaquin River, which was about ten miles away.

PRAIRIE FALCON. *Falco mexicanus* Schlegel.

So far as the author can learn the favorite hunting ground of the Prairie Falcon is rough, foothill country; and as such conditions are not found in the immediate vicinity of Fresno I attribute the apparent scarcity of the bird to a lack of suitable environment. I have observed a very few of these swift-winged falcons during the past ten years, nearly always in the fall and during dust and wind storms.

A farmer living near New Hope once told me of a long-winged "bullet-hawk" that made regular visits to his place in quest of young chickens, which it seized and bore away so rapidly that he could never prevent the loss. Finally he resolved to wait for the robber, as it always appeared about the same time each day, coming from the foothills of the Coast Range mountains, fully twenty-five miles away, and returning toward the same place. Standing in the shelter of a shed one day, shotgun in hand, this man observed the falcon approaching, and fired just as it had started away with a squawking young fowl. At the shot the bird dropped its victim but continued its flight, although apparently much weakened. It was never seen again.

Up in a canyon above Cantua Creek there is a series of caves or potholes on a steep cliff, where some large bird formerly nested, as evidenced by the streaks of white excrement that marked the face of the ledge below one of the holes. I have no doubt that this was the home of the pair of Prairie Falcons, one of which had discovered such a rich hunting ground twenty-five miles away.

I have been told that a pair of these falcons have nested for years on the almost inaccessible cliff above Tollhouse, in the Sierra foothills on the opposite side of the valley. Both of these stations are well outside the bounds of the region treated in this work, but on account of the rarity of the birds in Fresno County it seemed not out of place to mention these two instances of their probable occurrence.

DUCK HAWK. *Falco peregrinus anatum* Bonaparte.

What the Sharp-shinned Hawk is to small birds, this falcon is to ducks and

other water fowl. The flight of the Duck Hawk is so marvelously fast that even ducks have not a chance to escape unless there is some pond or slough nearby into which they can dive. The writer remembers standing, with several companions, on the shore of Summit Lake one late October day, when, upon hearing a sound like a heavy wind blowing through the tules, we turned and saw a duck plunge into the lake from a height of not less than six hundred feet. The splash of the impact resembled the report of a revolver. "Bullet hawk", called one of the men, and looking up we saw one of these long-winged pirates making off for a new field.

At another time we noticed a small flock of teal winging their way toward us, with a black speck fully a quarter of a mile in their wake and slightly above them. The flight of the ducks, rapid as it was, seemed slow in contrast to that of the hawk. The latter was almost upon the unsuspecting birds in an incredibly short time. Suddenly the ducks scattered and half a dozen teal fell with cries of fear into the water almost at our feet. Had there been no water directly under them at the moment the hawk was seen there is no doubt that at least one duck would have been captured. A friend tells of seeing a Duck Hawk dash at a lone goose that was flying over, striking it head-on with such force that it fell within a few feet of the observer. Besides a broken wing the bird seemed to have suffered otherwise to a great extent, for it soon expired.

During the winter of 1903 one of these hawks was seen many times about my father's place near Clovis. A flock of Brewer Blackbirds that fed in the corral back of the barn was levied on for a heavy toll, and in a manner against which the birds seemed totally unable to guard. I happened to be within a few yards of the corral one afternoon when the falcon hove in sight. He seemed aware of the exact location of the blackbirds, and with a dash of speed so rapid that I could hardly follow his movements, circled completely around the barn, seized his victim without pausing, and with powerful strokes of his long pointed wings made off for some more secluded place. The blackbirds hardly knew what had occurred and before they could give a hurried "chack" and take flight the hawk was almost out of sight, so with a nervous half-foolish manner they settled down again as if realizing that something had occurred, but totally unable to understand what it was.

One bright January day I noticed a coyote sneaking through a field of stubble, and as he seemed unaware of my presence I concealed myself to see if I could learn something of his habits. As he trotted along a jack rabbit suddenly jumped up and came straight toward me, and the coyote was not long in starting in pursuit. When they were within less than one hundred feet of the place where I was hidden there was a sudden rush of wings and a duck hawk dropped like a meteor straight for the rabbit. When within about ten feet of the ground the hawk spread his wings and attempted to seize the rabbit, which, however, escaped by suddenly turning back, but in so doing came very near dodging into the mouth of the coyote. The roar of wings seemed to slightly disconcert *Canis*, who was not prepared to take advantage of so good an opportunity, and before he realized what had happened the hare had decided that things were getting too lively and was covering the ground with long leaps. The coyote loped along behind, evidently not desiring too close an encounter with a creature that could

produce such an ominous roaring sound. Meanwhile the falcon mounted higher and higher and then dropped again. Three times this performance was repeated before the trio were lost to view, and although the rabbit gave a good account of himself, yet I fear the odds must have eventually proven too great.

On another occasion the author was acting as ditch tender, and was guarding a rather high fill that was carrying about all the water that could be crowded through the ditch. The March sunshine produced a drowsy feeling, and as I sat on a head-gate with my thoughts, perhaps, centered more upon some Red-tail's nest up in the hills, than upon my duty, there was a sudden roar as of a large volume of water rushing through a small aperture. I sprang to my feet thinking that the ditch bank had given away, but was much relieved when I beheld one of the long-winged, black-moustached falcons, which had made a parachute drop upon some small object in a nearby field.

NORTHERN PIGEON HAWK. *Falco columbarius columbarius* Linnaeus.

The Pigeon Hawk must be considered a rare winter visitant to this part of the valley, and I have only two or three records of its occurrence.

About the middle of October, 1905, one of these little hawks stayed around the trees on my father's place near Clovis, for a week or more, and was often seen. When discovered on some perch it would fly through the nearest tree, out on the other side and disappear with a fast, strong flight. On the morning of October 18, as I came out of the house I was surprised to see my hawk sitting on the clothes-line post in the back yard. He was but a few yards distant, and the brownish tail with narrow white bands and white tip, together with its white throat-patch, convinced me that my previous identifications had been correct.

I have records of this hawk as noted February 20, 1903, and November 3, 1903, both birds being quite satisfactorily seen at close range.

AMERICAN SPARROW HAWK. *Falco sparverius sparverius* Linnaeus.

Nearly everybody knows this, the smallest of our hawks. Fortunately the majority of the agriculturists and sportsmen realize that it is, for the most part, a harmless little hunter and for this reason it is seldom molested, except by that class who shoot at anything that wears feathers or fur. The Sparrow Hawk is quite generally distributed all through the lowlands in winter, but retires to wooded areas during the nesting season. It is known to nest along the San Joaquin River, in the oak covered districts in the southern part of the county, and in the trees along some of the creeks that come down out of the hills.

This species subsists to a great extent upon grasshoppers, crickets, and other large insects, as well as mice; and the bird-catching tendency seems to be a trait that only appears in the case of certain individuals.

One winter a male of this species, which spent the greater part of its time in my father's vineyard, seemed to be especially destructive, pursuing and capturing not a few sparrows, while on one or two occasions he dined on Meadow-larks. This habit, happily, was not shared by several others of his kind that were frequently seen nearby.

June 8, 1907, while driving along the road just above Academy, I noticed that grasshoppers were flying up from the roadside in goodly numbers and zig-

zagging out into the fields. Soon I saw a Sparrow Hawk leave its perch in an oak tree, and, deftly seizing a flying hopper, it perched by a hole under a dead branch, and reaching inside, deposited a meal for its mate or children. While I was within sight of the tree the performance was repeated, so that grasshoppers were probably the staple diet of this family at least.

May 9, 1908, I examined two nests of these little falcons in trees along Dry Creek, six or seven miles east of Clovis. One nest was in what was, no doubt, an old excavation of a flicker, sixteen feet from the ground, in a large, rotten branch of a cottonwood. This cavity held small, white, downy young, and I was attracted to it from a distance by the female bird, which came out to meet me. She kept up a continual screaming while I remained near, and frequently dashed close to my head. Her mate did not put in an appearance.

The second nest was in a dead willow stub, and was not discovered until the female left the nest, after I had struck the tree several heavy blows. This excavation was about one foot in depth and eight inches in diameter at the bottom, where five eggs, far advanced in incubation, rested on the rotten wood and chips. The female left her home silently and was not seen again.

BARN OWL. *Aluco pratincola* (Bonaparte).

In all the bird kingdom there is probably no creature that is more unappreciated, more persecuted, or more disliked than this night prowler; yet it is certain that no other bird found in Fresno County can compare with it in usefulness. Great Blue Herons, weasels, and gopher snakes all do their part in keeping gophers in check in the alfalfa fields, but the Barn Owl probably captures more of these rodents than all other agencies combined. As a mouser he stands far above any other bird.

The author once found a pair of these owls occupying the garret of an abandoned house on the plains southwest of Fresno, and the number of bones of small mammals that were scattered about was surprising. There was not less than a five gallon measure full of skulls alone, the greater part of which appeared to be mouse skulls. A visit to the nesting place of a pair of Barn Owls should be sufficient to convince anyone that this bird is the farmer's friend, yet the appearance of one of these owls is very often greeted with a charge of shot, for to kill "one of them Monkey-faced Owls" seems to be regarded as a good deed.

Fortunately Nature has made this owl a nocturnal hunter. It is because so many of the rodents are most active during the hours of darkness that owls can be of such great service.

It is seldom that Barn Owls are seen during the day time, unless aroused from their hiding places. But fleeting shadows falling across the street on moonlight evenings tell of their presence as certainly as does the sudden "kar-r-r-ick" that is frequently heard overhead. The hiding places are in thick trees, in old houses or barns, and in holes in banks; but at night the birds are distributed quite generally over the valley.

The same places that conceal the birds during the daylight hours are used in many cases for nesting sites. As far as I can learn the holes in the banks along the San Joaquin River shelter by far the greater part of the nesting owls in this vicinity. In my experience six eggs constitute the usual set, although no doubt

more are at times laid. Sometimes the eggs lie on the bare earth or whatever material the nest cavity contains, but nearly always there is a large amount of fur, bones, and other refuse lying around and under the eggs. Six eggs found in a nest on April 12, 1902, were in various stages of incubation, one or two being nearly ready to hatch. Another nest that was examined on the same date just six years later was found to contain six eggs not quite so far advanced in incubation, while nearby was another cavity with four apparently fresh eggs.

May the Barn Owl continue to click and scream and cast his shadow over the fields through the long moonlight nights of many years to come!

LONG-EARED OWL. *Asio wilsonianus* (Lesson).

The Long-eared Owl is nowhere an abundant species in the vicinity of Fresno, for the same reasons, no doubt, that cause other owls to be scarce throughout this region. It has been met with along the San Joaquin River, and rarely in the trees that follow the courses of some of the creeks leading down out of the hills to the eastward of the city. It also occurs in certain favorable places along some of the large sloughs near Wheatville.

October 11, 1903, a Long-eared Owl was flushed from a thick willow clump growing close to the Gould ditch near Tarpey. After a short flight it alighted on a branch of a large cottonwood tree, where it sat blinking in the afternoon sunlight.

Mr. Chas. E. Jenney tells me that he has found this owl nesting in the willows along the San Joaquin River, and Mr. Grinnell mentioned having heard the call of this species near Lane's Bridge, while camped there the first week in April, 1911.

April 30, 1912, while walking along the dry bed of a slough not far from the New Hope school house, I frightened one of these owls from a willow, and soon found its nest which was built not over ten feet from the ground at the base of a large limb. The nest was very well built, and while I hardly think it likely that the tenants built it themselves, yet I am at a loss to know what species it belonged to originally. It was far too small and compactly built to be the workmanship of any of our hawks, and it could not have been constructed by crows or night herons, as neither have ever been found nesting anywhere near. The situation, too, was rather unusual, as I could almost look into it from the bank of the slough. It was the exposed position of the nest that made me doubt whether the owls had any part in its construction, as there were several dark and heavily foliated trees only a few yards away where it seems this species would have chosen a summer home, had the birds not been willing to make some sacrifices in order to avoid the duties of house building. The nest lining consisted of only a few dry leaves and grasses upon which rested six eggs just ready to hatch, two being already piped.

I trust that Fresno County is now richer by six Long-eared Owls and certainly no more valuable creatures exist than these nocturnal hunters, ever on the alert to wage warfare on the mouse and gopher hosts.

SHORT-EARED OWL. *Asio flammeus* (Pontoppidan).

Short-eared Owls are very common in suitable places during the winter, and are known to remain and breed sparingly. December 25, 1902, one was flushed

from an alfalfa patch, near Clovis, and November 25, 1903, another from the same place. November 26, 1906, they were found to be common in a stubble field two miles southeast of Clovis. They were fearless, or perhaps their eyesight was not good, for I was able to approach within ten feet of one without difficulty. There were at least half a dozen individuals and probably many more in the field.

Mr. Joseph Sloanaker reported this owl as occurring near Raisin during the winter, and in the vicinity of Wheatville and Jameson they are really abundant. One evening in December while concealed in a stubble field near Jameson, I was astonished at the great number of Short-eared Owls, Barn Owls, and Marsh Hawks that appeared just before sundown and began hunting over the fields. The number of doves that were disturbed by these Raptores was almost beyond belief, and the noise made by their wings as they flew wildly about was almost deafening. When I resumed my walk toward camp it seemed a really perilous journey, and there was grave danger of being struck by one of the rapidly flying doves that wheeled and turned, alighted and took wing again in a veritable maze. I estimated that there were at least two hundred Short-eared Owls in sight. They could easily be distinguished from the Barn Owls by the marked resemblance of their flight to that of the Texas Nighthawk.

April 12, 1902, a man who was plowing in a field near New Hope, flushed a Short-eared Owl from the weeds, and brought to me the three fresh eggs that were lying on a circle of dry grass almost upon the bare ground.

April 30, 1908, while looking for owls' eggs near the same place, a man told me of driving his horse and cart almost over one of these owls as she sat on her neatly made nest of dry grass and feathers. This was about two weeks before my visit and he said the nest contained "seven or eight white eggs a little smaller than hen's eggs." I have flushed this owl from the ground at quite a number of places on the west side of the valley during April, but never found a nest.

SOUTHERN SPOTTED OWL. *Strix occidentalis occidentalis* (Xantus).

The occurrence of this owl in Fresno County is known to the author only through the observation of a single individual seen March 7, 1908. This was in a small grove of cottonwoods near Letcher, in the foothills about twenty-six miles northeast of Fresno and a little outside the district treated in this list. As it is a definite record for this general region it seemed not out of place to mention it here.

While I can give no other record of the presence of this owl, yet for certain reasons, I feel convinced that systematic work in the foothills along the western base of the Sierra Nevada Mountains in this county would prove that the species is not quite as rare as one would be led to believe from the scant information that can be gathered locally concerning it.

A more complete account of the record referred to above can be found in *The Condor*, xi, 1909, page 82.

CALIFORNIA SCREECH OWL. *Otus asio bendirei* (Brewster).

Of all the birds the author has ever encountered this one seems to be, by far, the most difficult to study, and after ten consecutive years of observation in the Fresno district any attempt to state whether or not this little owl is of common

occurrence would be mere guess work. I have heard the call of this bird within the city on one or two occasions, and Mr. Grinnell tells me that this species was one of the four owls that he heard along the San Joaquin River near Lane's Bridge the second week in April, 1911.

As the Screech Owl keeps so closely concealed during the daylight hours it might be easily overlooked. At any rate I have actually seen one of these birds only once, and that one had been routed out and was being mobbed by half a dozen angry mockers. It was the 11th day of August, 1906, when I heard such an uproar and scolding as to attract more than casual attention. I was working in a peach orchard about three miles east of Clovis, and as something out of the ordinary seemed to be going on I lost no time in investigating. The mocking-birds were flying into, over, and around a thick-foliaged tree in which a Screech Owl sat blinking and staring. When I was within about ten feet of the tree the owl flapped out and flew across the orchard with its tormentors in full pursuit.

Two days later some boys told me of shooting a small owl that they had found in a tray shed near the orchard. The next day, upon investigation, I found what was, no doubt, the same Screech Owl that I had previously seen. The appearance of the shed seemed to indicate that he had spent several days there.

PACIFIC HORNED OWL. *Bubo virginianus pacificus* Cassin.

Nearly everyone who has lived near the wooded sections of Fresno County has heard the voice of this, our largest owl, and it is known, often, by no other name than "hoot owl." Formerly not uncommon, these big birds are rapidly becoming rare, as they must have hunting grounds that have not been rendered barren by man and his plow.

These great owls are possessed of appetites that, seemingly, are seldom entirely satisfied. It may thus be hunger that often drives the Horned Owl forth on his foraging expeditions long before darkness has made it safe for the timid field mice to venture forth, and at times even before the sun has dropped below the western rim of the valley. December 28, 1904, just before sundown, a Horned Owl flew over an alfalfa patch near Clovis, and was not in the least confused by the glare of the setting sun. He made a swoop at a horned lark and then passed on.

A chance pair of these birds may still be found along Dry Creek east of Clovis, but the only places in the valley where they are at all common is along some of the large sloughs in the vicinity of Wheatville, and possibly in the oaks to the south and east of that place. They are often heard along the San Joaquin River also, but each year become less in evidence.

While camping near New Hope in the early winter of 1904 I was awakened just before daylight on the morning of November 30 by a pair of Horned Owls that were giving a concert nearby. One of the birds had a rather weak, feminine voice, peculiar in that it always ended with an extra "hoot" that was given after the bird had apparently finished its call. It sounded like "hoot, ta-whoo, who-who--hoot," the last note being not quite so loud but almost as distinct as the others. The other bird seemed to be stationed a short distance from its companion, and always answered in a deep, heavy, bass voice, sometimes before the first one had finished.

Among a clump of willows standing in three or four feet of water I found a pair of Horned Owls nesting on April 12, 1902. They were occupying what may have been an old nest of a Night Heron, a thin frail structure, placed fourteen feet above the water. It measured six inches in width on the inside and nine in length, with the cavity only two inches in depth; but it seemed ample for the great bird that occupied it, and for her three eggs. The latter were nearly ready to hatch. This was near New Hope, and on April 6, 1906, I examined two more nests of the same species within a mile of the first one discovered. One of these nests was thirty-five feet up, in a partly-dead willow in a field, and had three fuzzy, white, young birds of various sizes. The other nest was eighteen feet up in a willow in a thick clump that, as in the first instance cited, was growing in water. In this nest was one tiny owlet, apparently just hatched, one a little larger, and a third that was fully twice as large as his youngest brother or sister. There was one gopher and parts of two cottontails in this nest.

In examining the three nests referred to I was in apparent danger of being attacked by the angry parents. They remained near at hand, frequently jumping from branch to branch, and hooting continually.

March 29, 1909, while looking at a hawk's nest fully seventy feet up in a big sycamore that stands in the creek bed above Academy, I detected a big owl perched near the nest. I felt certain that his mate was on duty, but much as I needed a set of eggs of the Pacific Horned Owl for my collection, I passed on up the canyon leaving the owls undisturbed. It was not the first time, either, that I had looked up at that nest; but the forty or more feet of smooth bark to be scaled before a single branch could be reached was an obstacle too great for me to attempt to overcome.

BURROWING OWL. *Speotyto cunicularia hypogaea* (Bonaparte).

Ten years ago, throughout most of the region about Fresno, could be heard all through the April evenings the characteristic "kook-ka--wah" of the Burrowing Owl floating across the summer-fallow fields just as darkness hid the last night-hawk from view. During the long moonlight nights that followed later in the summer, the indescribable call that this little owl utters as it hovers over some object was none the less an indication of the abundance of these birds. This is the call that our Mockingbird has learned to imitate so perfectly, but for which man's alphabet does not provide letters by which an idea of its nature may be conveyed from one person to another.

"Billy owl" is the name by which this, our smallest owl, is known to everyone, and the name seems to fit him admirably. As he sits calmly on a fence post, eying the chance passer-by out of half closed eyes he has a comical, yet sleepy expression that always attracts attention. The "forty-niner" and the eastern tourist alike regard the "billy owl" as a warm friend rather than as just a harmless bird.

Civilization, cultivation, and squirrel extermination have now crowded these little owls farther and farther out to the edges of the Fresno district, to the west side plains and a few other unsettled areas. When these agencies have left no room for them anywhere in the valley, then Fresno County will have lost not only a most interesting bird but a very useful one as well, for the species lives

almost entirely upon mice, beetles, and other creatures injurious to crops. The birds have been observed flying around arc lights, catching the large insects that are attracted by the glare. These lights form a feeding ground that is otherwise monopolized by the bats.

At some time in the month of April, occasionally later, a pair of burrowing owls may be seen sitting contentedly at the mouth of a burrow formerly occupied by some large rodent, and at such times it is safe to assume that housekeeping has begun in that underground home. Possibly, in some cases the former tenant departed rather unexpectedly and through no wish of his own, but in any event the owls are much to be preferred to ground squirrels as neighbors.

Large quantities of dry, broken-up, horse manure cover the mound at the entrance to one of these humble homes, and a trail of the same material leads down the windings to the underground chamber, where from six to eleven, nearly round, white eggs lie on a thick bed of this apparently indispensable article. Sometimes these nests are scarcely two feet underground, and again twelve feet of tunneling will fail to bring an inquisitive ornithologist to a position where he can examine the cavity; but it is never too deep to keep out fleas, and a nest that is not conspicuously infested with these pests is exceptional.

The author and two companions, in an effort to examine a nest of this bird, once dug horizontally just eighteen feet, but to a depth of only twenty-four inches, and we were rewarded by finding only a single fresh egg. Within two feet of the egg and crawling blindly toward it, was a very young squirrel that had probably, at our approach, taken refuge in the first burrow that it could reach.

A few of these interesting little owls may still be met within cultivated areas, where they nest in waste fields and along roadsides; but their numbers are limited and it seems only a matter of a few more years until we will be unable to number the Burrowing Owl among the birds of the Fresno district.

ROAD-RUNNER. *Geococcyx californianus* (Lesson).

Although the favorite haunts of this strange bird are to be found along the rough, brush-covered hills, a few stray birds may be met with from time to time in the vineyards in the most highly cultivated parts of the valley. Until the present season (1912) I had observed only lone birds in each instance, but this spring several pairs were seen at different places between Fresno and Sanger.

I have noted Road-runners along the San Joaquin River near Lane's Bridge, and on December 6, 1905, one individual was seen near the New Hope school house north of Wheatville. April 14, 1906, another was observed in the Barton vineyard, east of the city.

Several times during April and early May of this year I noted single birds or pairs about vineyards in the vicinity of Lone Star. As the custom of planting fruit or ornamental trees around the farms and along ditch banks has furnished ample concealment, it seems probable that a few pairs may have nested in the valley.

June 11, 1912, a Road-runner was seen to emerge from a row of eucalyptus trees at the roadside. It was immediately pounced upon by a pair of Western Kingbirds, which followed it as it turned, twisted and dodged, running whenever an opportunity was afforded. The angry Kingbirds kept up a continual chatter

as they swooped viciously at the big fellow. At my too near approach, the Road runner made off down the road a few steps and dodged into a vineyard. As it turned I saw some object held in its bill and thought it looked very much like a nestling bird of some sort; at any rate the plunder was so valuable that the sprinter was willing to risk a severe beating from the Kingbirds in order to make away with it.

CALIFORNIA CUCKOO. *Coccyzus americanus occidentalis* Ridgway.

Cuckoos occur during the summer months in the willow thickets along the San Joaquin River and a number of the larger canals. They are not much in evidence, and their retiring habits make it difficult to determine in what numbers they are present, but they surely cannot be called common at any time. Their call note, a half-subdued "kuk-kuk-kuk", is sometimes heard during June or July from a tangle of willow brush and vines, but the bird is actually seen much less often.

July 4, 1907, a Cuckoo was seen several times in a willow tree near the river, a short distance above Lane's Bridge. There may have been a nest nearby, as this bird was remarkably fearless and came within less than twenty feet of me several times, at intervals giving voice to its call when perched on a branch in plain view. Six days later I heard the same call from a thicket on Fancher Creek some six miles northeast of Fresno.

In all my prowling about the ditches near Clovis I never but once found a nest of the California Cuckoo and the discovery of that one was entirely accidental. July 10, 1902, while passing a small, somewhat isolated, willow that stood at the very water's edge in the Gould ditch south of Clovis, I thought I saw a nest, and upon stepping around the tree for a better view, a Cuckoo, with an unsteady flight, not unlike that of a nighthawk, flew down the ditch to a place of concealment. Just nine feet from the ground, at the junction of the trunk and the first branch, was a bulky nest of coarse twigs, lined with willow catkins, in which rested two small birds. They were nearly black in color, with the feathers not yet through their sheaths, this giving the downless little creatures a rough, almost thorny, appearance. From the position they occupied in the nest their bills pointed skyward. When I picked one of them up he clung to the nest lining uttering a faint squeaking note. The parent bird was not again seen or heard during my examination of her home.

BELTED KINGFISHER. *Ceryle alcyon* (Linnaeus).

The ninth and tenth days of August, 1905, the author spent, in company with two companions, along the San Joaquin River a short distance below Friant. At that time Kingfishers were rather common, and were often seen flying along the course of the stream, or perched either singly or in pairs on dead branches overlooking the water. Their rattling calls were frequently heard. It is possible that they may breed in small numbers in the banks that are so numerously tenanted by Barn Owls, but their presence there has never been detected during the nesting season.

In late September a few of these birds may sometimes be found along some of the larger irrigation canals, fishing for frogs or minnows near the headgates. September 21, 1903, one was observed about two miles north of Fresno, and the

following day the same one or another near the same place. April 24, 1906, I observed a lone individual flying along the Gould ditch near Clovis. July 25, 1912, another was seen perched on a dead branch over a muddy slough in the Kings River bottom above Centerville.

WILLOW WOODPECKER. *Dryobates pubescens turati* (Malherbe).

Willow Woodpeckers are not very common anywhere in the Fresno district, being most abundant, from what I can learn, in the oaks throughout the region south of Riverdale. The species was observed near this place July 13, 1911. Individuals are to be met with almost anywhere in the valley during the winter months, but nearly always only a single bird is observed. They frequent cottonwoods and willows along ditches and canals, but being of rather a quiet nature, are easily overlooked. They crawl along the lower sides of branches, now and then tapping gently or uttering a half subdued "squeep".

This species has been observed near Fresno, March 6, 1903, at Clovis, December 17, 1907, below Academy on Dry Creek, March 26, 1906, and along the river near Lane's Bridge, where a few may possibly breed.

NUTTALL WOODPECKER. *Dryobates nuttalli* (Gambel).

Miss Winifred Wear records this little woodpecker from Laton, April 17, 1909, and from Riverview, April 27, 1907. It occurs not uncommonly in the oak belt of the hills along the eastern part of the valley.

RED-BREASTED SAPSUCKER. *Sphyrapicus ruber* (Gmelin).

Among the birds in the collection of Miss Winifred Wear there is a fine specimen of this sapsucker that came into her possession November 16, 1910, under rather unusual circumstances. One of the children in her school, knowing of her interest in birds, brought the specimen, still alive, to the schoolroom. The child was a foreigner and was unable to give a very clear account of its capture, but said that her brother-in-law had had the bird picketed in his yard for several days. It would probably not have lived many days longer, as there was a bad wound in one wing. The bird, a female, was identified by Mr. Grinnell as *Sphyrapicus varius daggetti*; but the A. O. U. Committee has not approved of this name.

A single bird was seen by the author in one of a row of walnut trees by the roadside several miles northeast of Fresno on December 25, 1911. This is the only one ever seen by him in the valley.

CALIFORNIA WOODPECKER. *Melanerpes formicivorus bairdi* Ridgway.

This is another bird that, through lack of suitable environment, occurs as a straggler only, within the limits of the region under consideration. A noisy, abundant, and conspicuous resident of almost the entire foothill region along the eastern side of the valley, it is not surprising that occasionally a venturesome individual strays below the usual habitat, but even in such cases it seldom wanders far. Usually its presence in the valley is noted along streams where oak trees extend their range farther out toward the plains than elsewhere. Along Kings River this woodpecker is often seen near Centerville, and sometimes follows down the river bottom much farther, but it has never been recorded as seen in the treeless areas and among the vineyards.

Dry Creek, below Academy, is another outlet from the hills that at times makes possible the occurrence of this bird, but in general the range of the California Woodpecker seems to correspond very closely to that of the oak trees. This species should be confidently looked for among the valley oaks in the southern part of the county.

LEWIS WOODPECKER. *Asyndesmus lewisi* Riley.

July 26, 1905, a Lewis Woodpecker was seen in a corral two miles east of Clovis. It was flying a few feet above the ground, and from the manner in which it twisted and turned it appeared to be in pursuit of some small insect that was not visible to me, although I was but a few yards away. Finally the bird alighted on the side of a barn where it looked like a huge swallow. It remained there for some moments chuckling to itself in an undertone.

Six days later I observed what was no doubt the same bird, as it was within one hundred yards of the barn where it was first seen. This time it flew into one of a row of poplars, where it remained quietly perched on a large branch.

July 13, 1911, while watching the hordes of blackbirds that swarmed about the overflowed area near Wheatville, I was a little surprised to see a large bird that was at once recognized as a Lewis Woodpecker. It flew up from the bottom of one fence post and alighted near the top of another nearby. Although there was a sheet of water covering the ground for miles around, yet there was quite a growth of oak timber and willows that extended away toward Summit Lake; there was also much country to the eastward where this species might be found to occur commonly.

March 28, 1912, while driving along the road in Scandinavian Colony, a Lewis Woodpecker flew from a fence post and attached itself in a vertical position to the gable end of a building.

May 3, 1912, a fine, richly-colored individual was noted in a willow grown area between Fowler and Del Rey. After a short flight it perched in a willow tree, where it remained while I drove the car directly under the tree. I hardly think any of these records indicate breeding birds.

RED-SHAFTED FLICKER. *Colaptes cafer collaris* Vigors.

This Flicker is the only member of the woodpecker family that can be called an abundant species in the vicinity of Fresno, and each year the birds appear to become more numerous.

Trees along the irrigation canals are used for roosting places and for concealment, but the Flickers feed upon the ground in large numbers, especially in the fall and early winter. They often spring into the air from under the very feet of a hunter, the suddenness of their appearance and their querulous call at such times being quite disconcerting.

Ants seem to be the favorite food of these birds, and it is no uncommon sight to see two or three Flickers on the ground near an ant hill greedily disposing of the occupants as fast as they appear. Old decaying logs are also carefully worked over at frequent intervals, as well as the rough bark of cottonwood and willow trees.

Unfortunately these handsome birds have fallen into disfavor among a large number of both city dwellers and country residents, on account of their habit of

drilling holes in the gable ends of buildings. When once a house has been selected it seems that nothing short of death will cause them to cease their drilling operations until one, and in some cases three or four, holes have been cut through the outer wall of the building. Whether these holes, which are generally made in the winter, are excavated for roosting places or simply through a sort of nervous energy seems a matter of doubt; but certain it is that the birds spend much time in them as soon as they succeed in completing their work. It is a common sight, on rainy days, to see a Flicker's head peering out from his open doorway.

As the trees in the city and along the canals only offer an occasional dead stub suitable for these birds, the great majority of our Flickers repair to the foothills and to the heavier timber along the river to nest.

May 6, 1910, a Flicker was flushed from a small willow stump not over five feet high. The cavity was about eight inches deep and held six heavily incubated eggs that rested on the dry, rotten chips at the bottom. This stump was near the Gould ditch, two miles south of Clovis, and with one exception furnished the only record of this species breeding in that vicinity, so far as I have been able to learn.

April 7, 1911, I noticed a great quantity of chips at the base of a cottonwood tree near Lane's Bridge. This tree was used as a gate post, and for a height of about eight feet was green with not a few branches of new leaves, but for a distance of four feet or more down from the top it was quite dead. In this dry part, about eleven feet from the ground, a pair of Flickers had excavated a nesting cavity fifteen inches deep and nearly eight inches in diameter at the bottom. A visit to this nest April 29 revealed one of the birds at home and a fine set of seven fresh eggs that are now in my collection.

April 30, 1910, I flushed two Flickers from nesting cavities, one twenty feet up in a cottonwood, and the other in a knot-hole half that height in an oak. May 18, 1908, a brood of half-grown young were found in a hollow sycamore branch near Letcher.

This species is frequently called "yellow hammer", a name that was, no doubt, brought out by homeseekers from across the Rockies.

TEXAS NIGHTHAWK. *Chordeiles acutipennis texensis* Lawrence.

"Gee! there goes an old bullbat. I haven't seen one of them since I left Missouri." It was late one April afternoon, just as the sun was dropping behind a row of fig trees that concealed the western horizon, that I happened to be talking with an acquaintance who was working in a vineyard. A glance in the direction indicated revealed a Texas Nighthawk, flapping and tacking along in the apparently aimless manner so characteristic of this species.

This was not the first nighthawk that I had seen in Fresno County, as the birds are abundant summer visitants to the lower portions of the valley, being equally common throughout the vineyard sections and over the dry plains southwest of the city. The earliest records that I have for the appearance of this bird are those of two nighthawks observed five miles east of Fresno March 25, 1911, and a single individual seen a mile north of there the same evening. Mr. Joseph Sloanaker informed me that he observed the species, near Raisin, one day earlier than they were noted near the city; and it is possible that I could have made earlier records on several other occasions had I been able to get out into the country

during the last half of March. By the end of the first week in April nighthawks have usually become quite numerous, but it is not until the first half of May is gone that they begin nesting in any considerable numbers. During August these birds are very conspicuous, and the author has sometimes observed literally hundreds of them flying about a certain alfalfa grown swale near Clovis. Many of these, no doubt, were immature birds, which remain with us until their first fall migration. This usually occurs in early September. I have never observed this species later than September 18 (1905) when a lone nighthawk was seen flying over a vineyard near Clovis.

Preparing a nest in which to deposit her two eggs is not a difficult task for the female nighthawk, as, in every case that has come under my notice, the eggs rested on the bare, dry earth with not a vestige of nesting material either under or around them. It is a hopeless task to look for these eggs unless the parent bird is flushed from them, and even when the angry birds have revealed almost their exact location it sometimes requires no little careful hunting to detect the eggs, on account of their striking resemblance to small clods. When disturbed on her eggs the female usually makes a purring noise and flies but a short distance when she again alights; if forced into the air she is soon joined by her mate, who is often more demonstrative than the female and darts around near the intruder, frequently giving a peculiar clucking call.

As the great majority of our nighthawks nest in the vineyards, they are, no doubt, frequently disturbed, and possibly this may account for their eggs being found in late July, as recorded beyond.

Below is given a list of the few nests observed by the author, nearly all being found by flushing a bird at a time when nighthawks were farthest from his thoughts.

May 15, 1906; two eggs; one abnormal in shape and infertile, the other containing small embryo. Eggs at base of vine in vineyard. Ground very dry and hard. Both birds unusually bold.

July 2, 1906; two eggs; good-sized embryos. Eggs on soft ground at base of a sunflower growing in a field of melons. Bird flushed.

May 27, 1907; female flushed from two slightly incubated eggs that rested in a very slight natural depression about one foot from the stump of a large vine. These eggs were in the shade, as all others have been; it seems possible that the incubating birds move their eggs around in order to be protected from the direct rays of the sun.

May 26, 1911; two considerably incubated eggs on bare ground in vineyard. Bird flushed at close range.

July 21, 1911; two eggs; incubation advanced. Bird flushed from bare ground, between two vines in vineyard.

Mr. J. D. Clark has sent me nighthawk eggs from near Letcher that were found on small knolls in a pasture where there was little or no protection.

As the nighthawk seems to have few enemies it will doubtless continue to be an abundant summer visitant to this part of the San Joaquin Valley for years to come; and it should be a welcome visitor for it feeds on a class of insects that are, to a great extent, ignored by other birds. When night begins to spread her veil of darkness over the fields and vineyards a host of winged creatures come out

from their hiding places, and who can estimate the number of moths, mosquitoes, flying ants, and other insects that even a single nighthawk consumes before it ceases its hunting to perch lengthways, through the daylight hours, on some dead willow branch!

VAUX SWIFT. *Chaetura vauxi* (Townsend.).

Late in the spring, small, grayish-colored swifts are sometimes seen flying over, evidently in migration, as they are always traveling northward. They row along, alternately beating their wings and then sailing for a few yards, from ten to thirty feet above the earth. I have never observed more than two together; and I scarcely get more than just a fleeting glimpse of them, as they are silent and give no warning of their approach. A single individual that flew over on May 20, 1903, was clearly seen, as were two others observed near Clovis April 23, 1908.

While records made from birds seen in flight are liable to be questioned, and are to be discouraged in most instances, yet in this case the writer feels quite satisfied as to the identity of these birds. They were certainly none of our swallows, and bore no resemblance to the White-throated Swift, observed in June about the rocky cliffs above Tollhouse.

BLACK-CHINNED HUMMINGBIRD. *Archilochus alexandri* (Bourcier and Mulsant).

While the presence of this species in the Fresno district is unquestionable, its status is yet in doubt. Nests, supposed by the writer to belong to this species, have been found in June and July. Exact determination awaits actual collection of birds with nests. The females of the various species of hummingbirds are scarcely distinguishable at any distance.

ANNA HUMMINGBIRD. *Calypte anna* (Lesson).

In the author's opinion this hummer cannot be considered common anywhere in the Fresno district. It is, however, sometimes noticed about gardens in the summer, and becomes fairly numerous about the blossoming eucalyptus trees in the early winter, especially in certain parts of the city. During the month of November their squeaking notes may sometimes be heard as the little fellows fly from tree to tree or perch on the telephone wires. I have observed this species, together with one or two other hummingbirds, around the wild tobacco blossoms in the foothill canyons near Letcher in May; but their appearance in any numbers seems to be confined to the blossoming period of the eucalyptus trees.

RUFIOUS HUMMINGBIRD. *Selasphorus rufus* (Gmelin).

After seeing many green colored hummingbirds I was surprised and delighted one warm spring afternoon to see a large red hummer fly to a lilac bush in the yard of my father's place near Clovis. In his flight he made a sound like that produced by an empty rifle cartridge thrown swiftly through the air.

It was the 30th of March, 1907, but the day was one of those bright, warm, balmy ones that bring the migrants along in large numbers, and as the sunlight fell full on this tiny bird's plumage it glistened like burnished copper. I thought I had never seen so beautiful a bird, and was regretting that he was resuming his journey after only a few seconds pause, when he again came to a standstill, this time perching on a small umbrella tree not over thirty feet from where I was

standing. At that distance he appeared to be wearing a red jewel at his throat as it flashed beautifully at every turn of the bird's head. Within the next five minutes the hummer made half a dozen trips to the lilac bush and back to the tree, and finally came to a big pink rose, almost within arm's reach of where I stood enraptured. Probably if red hummingbirds were as common here as green ones, they would, in time, cease to be objects of wonder and admiration, but even now the sight of a Rufous Hummingbird whizzing northward in the first spring days fills me with an almost irresistible desire to go afield.

These little birds do not migrate through the valley in large numbers, or if they do they are much less conspicuous than would seem to be the case, judging from the one or two that are generally observed in the spring from the third week in March to April 2 (1906).

WESTERN KINGBIRD. *Tyrannus verticalis* Say.

To the uninitiated the name "kingbird" as applied to any of our local birds would be almost meaningless; but mention "bee martin" and every boy knows at once that we refer to that fearless tyrant of the air that once established in any favored place will tolerate no larger bird within a given radius of its chosen grounds.

Western Kingbirds are generally distributed in summer throughout all that portion of the San Joaquin Valley that I have been fortunate enough to visit, and they range well up into the foothills also. They appear equally at home throughout the cultivated areas and in the sparsely settled districts, and since their food seems to consist mainly of various insects and bugs, and since these, in one form or another, are not difficult to obtain, this valley supports a very large population of kingbirds.

In some sections this species has fallen into bad repute because of its fondness for bees, but I do not think it is fair to assume that bees are especially sought for. They seem to be taken in numbers only when they are more in evidence than any other creature. One pair of these birds that I had an excellent opportunity to observe fed their family almost entirely on grasshoppers, one or the other of the parents bringing a big hopper to the nest about every ten minutes. Often in July and August it is no uncommon sight to see two or three dozen kingbirds, together with quite a host of other birds, perched on a wire fence at the edge of an alfalfa field, all busily engaged in catching the yellow butterflies that occur so numerous at times. In such places the birds fare so sumptuously that they soon become excessively fat. The precision with which one of these big flycatchers can swoop out upon and snap up a passing insect is really marvelous, and no desirable creature that comes within their vision need hope to escape.

The date of the appearance of our kingbirds in the spring nearly corresponds with that upon which the Bullock Orioles reach here, as will be seen by the following dates of spring arrival: March 26, 1905; March 23, 1906; March 27, 1908; March 29, 1911. With the passing of August these birds have nearly all disappeared and only an occasional one is seen after the last week in that month. In 1905 the last one was seen August 26, and in 1911 a single individual was observed near Clovis, flying toward the south, on September 4.

Never, in ten years of observation, have I known a pair of Western Kingbirds to nest in an orchard, as the eastern form is said to do so often; neither do

our birds like the dense foliage and swaying branches of the willows bordering the canals and ditches. The majority of them find nesting sites in places provided by man's agency. Formerly they resorted to the framework of flumes, windmills, outbuildings, and even to the tops of fence posts; but of recent years the rural telephone lines that have thrown their network of wires and poles all over the valley have provided nesting sites galore, and of a kind seemingly exactly suited to the requirements of these birds. Nearly all the smaller lines are supported on poles without crossbars, the majority of these poles being about four inches in diameter and extending to a height of about sixteen feet, excepting where the lines cross entrances to farmhouses or intersecting roads, in which case the wires are raised several feet to permit the passage of derricks and other tail machinery. This additional height is attained by nailing two two-inch pieces to the original pole on opposite sides, thus leaving a four inch platform protected on two sides, in which a nest just fits snugly. A drive through the country during the summer months now reveals a pair of kingbirds tenanted in nearly every such pole.

It must not be understood, however, that trees are never resorted to, as not a few pairs find congenial homes in trees around dwellings. They are nearly always encouraged to remain, as they are of great service in driving away hawks, setting up a alarm at the approach of any sort of marauder. One pair that nested near my home were fearless in driving away any bird that chanced to pass anywhere near, and I often saw a poor, clumsy Turkey Vulture tumble nearly to the earth in unsuccessful attempts to elude its pursuers. Doves escaped only by their very rapid flight, although often chased over a quarter of a mile. After one of these exploits the male always returned triumphantly to the nest, where he, no doubt, received much praise for his bravery, judging by the animated conversation that took place.

Nest building begins about the first of May, and kingbirds may be found nesting all through this, and the following month. My earliest records are May 6, 1907, a set of five slightly incubated eggs, and May 1, 1910, a set of four in which incubation had begun.

Four or five eggs are the usual complements but some females deposit very small sets at times. On June 11, 1906, I found a nest with three heavily incubated eggs; the next season, in a tree not far from that place, I found one of these birds incubating two eggs on May 26, and no more were ever added. It is quite probable that this second set was the product of the same female that laid the set of three the previous season.

One season a pair of kingbirds, after spending several days in noisy discussion regarding several sites for a nest, finally began on June 3 the work of house building on a windmill. On the morning of July 4 the last one of their five offspring left this home, thus establishing, for a certainty, the length of time required to complete a nest, deposit a set of eggs, and get a-wing a family of their kind.

ASH-THROATED FLYCATCHER. *Myiarchus cinerascens cinerascens* (Lawrence).

The occurrence of this flycatcher along the ditches near Fresno late in May each season would seem to indicate rather late migration, later than that of any other bird of which I have records. After a brief sojourn lasting hardly more than

a week they gradually disappear, and none of them have been found nesting within the Fresno district, although it would not be surprising to find a breeding pair some summer along the river. August 9 and 10, 1905, I noticed several apparently immature birds along the river below Pollasky.

May 25, 1906, Ash-throated Flycatchers were noted in some numbers along the Gould ditch, south of Clovis, as also on April 21, 1908, while May 21, 1911, they were again present. The breeding season must be a brief one with this species as it appears again during the first week in September. In 1906 I saw a single individual in an orchard September 6, and collected a specimen near Clovis September 4, 1911. This was a bird of the year with much down in its plumage, and was surprisingly fat.

During the time these birds are with us they frequent the willows along canals, peach orchards, and occasionally the dry weeds in neglected fields. They are quite silent in the fall, but at the time of their spring visits they sometimes utter their bickering challenge when too closely approached.

SAY PHOEBE. *Sayornis sayus* (Bonaparte).

Those who have not been so fortunate as to hear the song of a Say Phoebe have missed a rare treat. It may be that this song is heard more frequently on the birds' nesting grounds, but here in the Fresno district where the species occurs only as a winter visitant it is heard all too rarely. In fact, I was several years in the country before I ever heard it, and even then it seemed hard to believe that such a plainly clad little creature could be producing such a pleasing variety of warbling notes. However, the fact that this bird's desire to sing sometimes seizes it on a gloomy, dark, foggy December day, when even the Mockingbirds are silent, may have something to do with the pleasing quality of the music.

This Phoebe appears during the second or third week in September, and departs during the last week in March, my earliest and latest records being September 12 (1904) and April 1 (1906). Say Phoebes share with the Audubon Warblers a habit of catching flies from a window, sometimes spending days at a time near a house, where they make frequent quick flights from some perch to seize a fly that has appeared on the glass. I have noticed that the south side of a building is generally selected as a place in which to carry on these fly-catching expeditions. Probably these places are chosen on account of their food being more plentiful, rather than from any desire of the birds to perch in the sunlight.

BLACK PHOEBE. *Sayornis nigricans* (Swainson).

Black Phoebes are common residents of nearly all the lower portions of the valley but can hardly be considered very numerous anywhere. I have always thought that there must be a fall migration, involving, perhaps, only the young of the year, as the number of phoebes never seems to increase or decrease from year to year. During the winter months these birds are more in evidence than at the time of nesting, but they are not at all conspicuous at any time. So far as my observations go they have no preference as to the type of country they frequent, the chief requisite being the proximity of water. I have observed Black Phoebes sitting quietly on a fence wire near some foothill creek, and have found them along the irrigation ditches near Clovis, while they seem equally at home around the large sloughs on the west side.

Nests of these birds are sometimes fastened to the walls of deserted cabins, and occasionally a pair will build in an old well if they can gain entrance, such nests being from six to fifteen feet below the surface of the ground. The most common nesting sites, however, are the large stringers of bridges, where the nest is securely fastened above the water. I have never known this species to choose a place where there would be support for the bottom of the nest, as the Eastern Phoebe is said to do. Our bird attaches its wall pocket to the vertical surface of a plank, and so securely is it fastened that it will often break apart rather than give way. This species often nests on the faces of rocks in the hills, but such sites are almost entirely wanting in the Fresno district. I have found one or two nests fastened to the partly dead trunk of some large tree, but it is safe to say that nine out of every ten birds choose the protection afforded by bridges, where mud is easily secured, and horsehairs as well, for these two ingredients enter largely into the construction of the nest. The lining consists of a scant layer of dry grass stems and sometimes a few long horsehairs, upon which rest the four, and sometimes five eggs. It is interesting to note that when four eggs constitute the set there are generally three that are unmarked and one that is quite heavily spotted with red dots on the larger end, but when there are five in the set the additional egg nearly always has just a few very fine spots like dust. My observations show that nearly always the spotted egg is the last one to be deposited. If that is the rule, then should a set of seven or eight eggs happen to be laid we might expect one or two specimens as heavily spotted as a king-bird's egg.

I have found eggs nearly ready to hatch on April 5 and fresh ones June 15, so the nesting period may be said to extend from March 1 to July 1, with probably two broods reared in a season, in some cases at least.

WESTERN WOOD PEWEE. *Myiochanes richardsoni richardsoni* (Swainson).

Wood Pewees have been observed by the author only during the fall migration, and are even then not common. September 11, 1905, a lone Wood Pewee was seen in a large patch of tall, dry weeds near Clovis, where I had a good opportunity of observing its feeding habits. Perched on a commanding site on some weed stalk it watched listlessly until a tiny insect, often invisible to me, came near, when the bird at once was all attention and with a quick flight snapped up the insect and returned to its former perch.

September 4, 1911, I saw several of these little pewees along the Gould ditch near Clovis, where they were perched on dry branches near the tops of the trees. From these positions they sallied forth to seize any luckless insect that chanced to pass their way, the snap of their bills being clearly audible at a distance of fifty feet or more. It was interesting to note that although their prey often led them some distance away, yet they always managed by two or three short, jerky flights to return to the same perch from which they had started, when with a half-subdued whistling "phe-yeer" they settled down to await the appearance of another insect.

One specimen collected, an immature bird with rusty patches in the plumage, proved to be very fat.

CALIFORNIA HORNED LARK. *Otocoris alpestris actia* Oberholser.

In former years, when large tracts of land north and east of Fresno were

devoted to grain farming, the California Horned Lark was one of the most abundant birds to be found in the district; but it has not responded favorably to the settlement of the country and is now rare in many parts of the valley. It is still to be found in numbers along the west side plains, and wherever tracts of land are to be found that have not been planted to trees or vines. The barren, uncultivated, alkaline plains southwest of the city now afford a home for the majority of our Horned Larks, while the foothill ranges to the east are proving attractive to a goodly host also. This species did not abandon without protest the areas it had occupied for so long, remaining even when section after section had been converted into vineyards; but when the vines had attained a growth of two or three years the ground was covered to such an extent that the larks were forced to withdraw. It seems that for feeding and nesting these birds must have dry, barren ground almost free from shrubbery. Scattered out in pairs during the breeding season, these larks often gather in immense numbers throughout the winter.

In driving along the road toward the river I have sometimes observed a Horned Lark in the shade of every fence post for miles at a time during the mid-day hours. It is interesting to watch these little birds at their pre-nuptial antics. Especially is this the case during the warm, bright, sunshiny days in February, when a male will frequently perch on a clod and pour forth his song time after time in a wiry, mechanical sort of way, beginning with a squeaky "chick-chink-chick," slowly at first but becoming more rapid until it ends in a sort of trill. If approached too closely the vocalist will reluctantly leave his clod and strut away across the ploughed ground in a dignified manner, but he seldom goes far and will at once return and begin again his monotonous song as soon as the intruder has passed by.

At times the enthusiasm of these little creatures carries them far above the earth, where they pour forth their song in true Skylark fashion as they mount higher and higher until they become mere specks or have disappeared entirely. In a short time, however, they come tumbling earthward again, generally alighting within a few feet of the place from which they took wing.

In the fall and winter the immense flocks of these birds that sometimes assemble in stubble fields break into the wildest confusion at the appearance of a Marsh Hawk, until the air seems to swarm with dozens of the birds, each calling in their squeaky way.

I have never been able to satisfy myself as to whether more than one brood is reared in a season, but have about decided that in some cases two families are raised. However, the center of my field of observations has been in the highly cultivated districts where it is quite probable that not a few of the earlier nests are destroyed by cultivation and the larks compelled to deposit second sets, while, under ordinary circumstances, only one set would be laid. As it has not been possible to determine, with any degree of accuracy, which of the sets found were of second laying I shall enumerate some of the nests found and allow the reader to draw his own conclusions.

Nests of this species are built most often in summer-fallow fields, but sometimes in very young vineyards, hay fields from which the crop has been cut, and on the uncultivated plains. Sometimes they are found at the base of a clod or a

small accumulation of trash, but in the majority of cases that have come under my observation a small weed or plant, frequently the California poppy, is chosen, probably more for the shade it affords than with any thought of concealment.

I have found eggs on the bare, dry dust in a slight hollow; and again an elaborate, deeply-cupped nest is constructed of dry grass-stems and rootlets. As the birds, nests, and eggs all blend wonderfully with the ground, they are among the most difficult nests to find with which I have had any experience. A complete set of eggs in many cases numbers three, although four are not rare.

Various grain and seeds seem to be the staple articles of diet with these birds, which feed entirely upon the ground.

NESTING DATES OF CALIFORNIA HORNED LARK

	Date		Contents of Nest		Remarks
April	12	1902	3	eggs	small embryos
"	22	"	3	young	half grown
"	27	"	3	eggs	small embryos
May	13	"	3	"	"
"	19	"	3	"	begun
"	21	"	3	"	far advanced
June	5	"	3	"	begun
April	9	1903	3	"	fresh
"	11	"	2	"	"
May	12	"	5	"	slight
April	2	1904	3	"	nearly ready to hatch
"	4	"	2	"	good sized embryos
"	6	"	3	young	several days old
"	21	"	3	eggs	small embryos
"	25	"	3	"	slight
"	30	"	3	"	well begun
May	12	"	4	"	small embryos
"	13	"	4	"	good sized embryos
April	17	1905	3	"	nearly complete
"	30	"	4	"	well begun
May	1	"	4	"	begun
"	5	"	4	"	well begun
"	17	"	3	"	advanced
April	23	1906	3	"	begun
"	28	"	5	"	advanced
"	12	"	3	"	"
May	9	"	4	"	begun
June	6	"	3	"	2 addled, 1 far advanced
April	11	1907	3	"	small embryos
"	20	"	4	"	begun
"	28	"	4	"	very slight
May	5	1908	2	"	deserted
"	6	"	3	"	advanced
"	9	"	2	"	fresh
"	10	"	3	"	"

YELLOW-BILLED MAGPIE. *Pica nuttalli* (Audubon).

The only claim of the Yellow-billed Magpie to a place on this list is through a record made by Miss Winifred Wear, of a bird observed near Riverview on the San Joaquin River northwest of Fresno. It has also been reported from Laton.

On account of the increasing rarity of this species it might not be out of place to mention such localities as are now frequented by magpies in this part of the state. Goldman (CONDOR x, 1908, p. 204) mentions a small colony near Summit Lake. The author can record them from Cottonwood Creek in Madera County about ten miles west of Friant, where, however, they must be considered rare, and it is doubtful if half a dozen pairs could be found along the whole length of the creek.

Near Letcher there is a small colony that has all but disappeared during the past few years, on account, no doubt, of the conspicuousness of the birds and of the fact that they nest very near a much travelled road. Then, too, the presence of a fig orchard nearby, where their visits may not be encouraged, might also explain the diminution in part. A visit was made to this colony on April 5, 1908, for the purpose of securing a set of eggs if possible, but of the seven or eight nests seen, only two were accessible to me. These were placed about forty feet from the ground in the top of a cottonwood tree near the creek. In appearance these were like the usually described nests of this species, being large hooded structures with a thick cup of mud for the nest proper, this being lined with dry grass stems and horsehair. These nests were about six feet apart, and one held a single fresh egg, while the other appeared to be ready for occupancy. The owners were exceedingly shy, scolding from a distance but not to be approached nearer than one hundred yards. All the other nests were placed in the extreme tops of sycamore, oak, and cottonwood trees, or on the ends of horizontal limbs from forty to sixty feet from the ground, and on such small branches that it would have been folly to have attempted to examine them. April 19, after an unusually hard ride on my wheel, I climbed to the two nests in the cottonwood, but was much disappointed to find them deserted and the one egg gone.

April 10, 1910, Chester Lamb, Chas. E. Jenney, and the writer again made the trip to Letcher, finding five or six wild, unapproachable birds, and only two nests that appeared to be tenanted. One of these could not be reached. After a difficult climb up a slender sycamore, Mr. Lamb found that there were no eggs in the second nest, although it was newly lined with horsehair; the two or three other nests that we managed to examine were in a dilapidated condition.

Another colony of magpies is known to exist farther up in the hills, in a sparsely settled district where they have been able to hold their own for the past thirty years, so I am informed by old inhabitants. In passing through that district on May 18, 1908, I observed a large number of the birds scattered over the country for two or three miles, and observed a number of nests that were from fifty to seventy feet up in some giant cottonwoods near a creek. Many bobtailed young were observed that were, apparently, not long out of the nest.

At a distance an adult magpie, as it floats along from one oak tree to another, bears a really striking resemblance to a *Phainopepla*, except in size.

BLUE-FRONTED JAY. *Cyanocitta stelleri frontalis* (Ridgway).

During the winter of 1900-01 large numbers of these jays invaded the valley, being found literally by hundreds everywhere eastward from Fresno, where they frequented the trees bordering the vineyards, roadsides and ditches. Their large size and gay plumage rendered them very noticeable, and no doubt not a few of their number were missing when the blue-coated host returned to its Sierran home. The species has not been observed in the valley since that time.

CALIFORNIA JAY. *Aphelocoma californica californica* (Vigors).

The California Jay being a bird of the foothill region is not of common occurrence in the vicinity of Fresno, but it is found at several points within the limits of this work. It is often met with in the willow thickets along the San Joaquin River, especially in the vicinity of orchards, and comes down Dry Creek, east of Clovis, to within about six miles of that place. The river bottom below Centerville is another place where jays are to be found. It would not be surprising to find this species at Laton or in the oak region near Riverdale, although I have not observed them at either place.

A nest found near Letcher April 5, 1908, situated eight feet from the ground in a partly dead willow near the creek, contained five eggs in which incubation was nearly complete. Another nest found below Academy on May 9 of the same year, held small young, while a third nest, found May 18, 1908, held three eggs. From this data it would seem that the nesting time of this bird is from the last of March through May, at least.

I have several times heard the call of this species in a large willow-grown swamp near Sunnyside, east of the city, but was never certain that the notes were not produced by a Mockingbird. As the California Jay is not to be found anywhere in the vicinity of Fresno in sufficient numbers to exert much influence over other species, I will not attempt to take up the discussion of its habits or alleged destructiveness.

WESTERN RAVEN. *Corvus corax sinuatus* Wagler.

On only two or three occasions has the Raven been identified in the Fresno district, and it must be considered rare. It occurs on the plains to the southwest of Fresno, and along the eastern base of the Coast Range Mountains, being observed by the writer principally in winter.

April 12, 1902, a nest with heavily incubated eggs was found in an old deserted barn about fifteen miles northwest of Wheatville. This nest, fastened rather insecurely in the forks of an upright post about twelve feet above the floor, was composed of dry, bleached sage-brush sticks, and lined with wool and burlap shreds. A great heap of sticks, nearly four feet high, below the structure, indicated with what difficulty the Ravens had made the foundation to their nest.

Two or three years later I again visited the place and found that, from all appearances, campers had spent several days in the barn, and had not only burned up the mass of sticks on the ground, but had torn down the nest as well for fuel.

WESTERN CROW. *Corvus brachyrhynchos hesperis* Ridgway.

Even the casual observer, it would seem, could hardly fail to be interested in this bird, especially as it is by no means a common species in the vicinity of

Fresno. Along the Kings and San Joaquin rivers it seems to be most frequently observed; and it is resident there, as Mr. Chas. E. Jenney informs me that he has found several nests with eggs in the vicinity of Lane's Bridge.

I have often observed this species in March and April along the river, where they sometimes congregate in flocks of as many as thirty. Most often, however, they are to be seen as single individuals, pairs, or squads of four or five, flying out to some marshy place where they feed along the edge of the water, taking turn at watching from fence posts or tree tops. Occasionally one will fly out of the river bottom to spend part of the day catching grasshoppers on the dry, hog-wallow land adjacent to the river. As these birds come and go at any time, one is sure to see a Crow tacking along near the knolls at almost any hour of the day. Early in the morning, and again before sundown, the black host assembles in the willows, preferably on some small island, where they caw, scold, and talk in animated tones. If some large hawk or heron appears two or three Crows always start in pursuit, and the large slow-flying birds must lead a rather strenuous existence when their lot is cast near the trysting place of a flock of Crows.

I have been much interested in what appears to be a sort of local migration that occurs in spring and fall, when Crows fly from the Sierras toward the Coast Range and vice versa. From February 9, to April 23, 1903, I saw numbers of Crows flying toward the southwest, passing near Clovis. December 19 of the same year one individual was observed flying in the opposite direction. All these birds are rather noisy, calling "h'waw, h'waw, h'waw", thrice repeated, or the note "caw", which is generally given five times in rapid succession, with a scarcely perceptible pause between the third and fourth.

March 5, 1906, opened with a raw, cold morning and a strong southeast wind blowing. While watching a flight of Turkey Vultures I heard the notes of a Crow, faintly at first but becoming more distinct. After a short time the call ceased to become any louder and then another was added. The one bird, which I occasionally saw diving down and then rising to about the height of the tree tops, was very noisy and continually uttered the note "cah" in a rather high-pitched, wiry voice. It was generally repeated five times, but once it was heard eight times in rapid succession. The other bird was evidently on the ground, and the first one seemed to be attacking it. I never had even a glimpse of this individual although its call was given almost as frequently as that of the other. It was a harsh, grating "car-r", generally repeated three times, but sometimes only twice, in a slow, angry tone. After some fifteen minutes the Crow in sight seemed to become tired of his exertions and flapped away toward the west and the cawing ceased immediately. I have thought that possibly a Raven was being tormented by a Crow, but as one of the birds was not seen at all it may have been a case of two Crows settling some disputed question.

Cunning, shrewd, unapproachable, except under cover, the Crows seem fully capable of holding their own against all enemies, and will doubtless be found scolding and quarrelling among the willow clumps along the river through many a windy March day in years to come.

DWARF COWBIRD. *Molothrus ater obscurus* (Gmelin).

Cowbirds, supposedly of this form, are known to visit this part of the San Joaquin Valley at times, but seem nowhere common. They probably do not breed

this far north as the writer has never found a Cowbird's egg in any of the hundreds of small nests examined during the past twelve years.

September 14, 1902, I was surprised to see three Cowbirds, apparently a male and two females, alight in a corral near Clovis, where they remained a short time and then suddenly flew away toward the south. I was within less than fifteen feet of them at the time.

July 13, 1911, I was enjoying a ride across the salt grass plains, when at a point south of Caruthers and east of Wheatville, I observed several blackbirds in some scattering straw left by campers in the shade of a large cottonwood tree at the roadside. As blackbirds were common everywhere these birds were given little notice until my attention was arrested by one individual that had a more erect, hurried walk than any of the others. It flew at our near approach and perched on a wire of a fence a few yards away, where I at once saw that it was a Cowbird, but unfortunately I had no means of securing it for more exact identification.

It may seem unwise to record these birds as the southern form of Cowbird, but the size of all four appeared smaller even than that of female blackbirds (*Agelaius*). Furthermore *obscurus* has been reported as far north as Bakersfield (Swarth, CONDOR, XIII, 1911, p. 161), so it is not a surprising occurrence that occasional individuals continue northward to Fresno.

YELLOW-HEADED BLACKBIRD. *Xanthocephalus xanthocephalus* (Bonaparte).

This handsome blackbird is of rather common occurrence in the vicinity of Fresno, being somewhat erratic in its appearance. It is often noted during the winter months. The large flocks of Brewer and Bicolored blackbirds sometimes have one or two Yellow-heads among them, and again the big fellows are seen by themselves in flocks of seven or eight birds.

It is probable that this species occurs more commonly along the west side in the alfalfa fields, but nearly all my records are from the region northeast of the city. September 7, 1905, a flock of seven Yellow-heads flew over, travelling toward the south, and September 4, 1906, four were seen flying in the same direction. January 12, 1903, two or three were observed in a large mixed flock, and one individual was noted with some Bicolors on April 2, 1905.

May 9, 1907, I found a small colony of these birds in a tule swamp east of Clovis, where they seemed quite at home among the many Bicolors that were nesting in the tall, dense growth of tules. I felt certain that I had at last found a breeding colony, but probably the birds were only transients as on a subsequent visit no trace of them could be found.

May 30, 1912, a colony of Yellow-heads was discovered among the rank tules growing along the roadside near Firebaugh. A number of brilliantly colored males sat on the telephone wires and on nearby swaying tule stems, the while going through a series of contortions that were not less amusing than the accompanying strident notes. It all had a meaning though, and was often answered in a similar manner by some bird concealed in the tules. Conditions seem favorable in much of that region for the nesting of this species in considerable numbers.

Two large tule ponds southwest of Fresno are usually the congregating place, and doubtless the nesting ground also, of a goodly number of these birds

each summer. They sing from the tops of the reeds, fly out to the nearby alfalfa fields, or glean around the corrals where, if not actually welcomed, they are usually tolerated or ignored by the busy ranchmen, who have no time to notice what is going on in the bird world around them, unless it affect their interests directly.

BICOLORED BLACKBIRD. *Agelaius phoeniceus californicus* Nelson.

At the present time the status of the Red-winged Blackbirds inhabiting Fresno County is not well understood, but for convenience and in the absence of specimens for comparison with birds from other parts of the state, they are placed under the above heading.

The writer has long been of the opinion that at least two forms of the Red-winged Blackbird occurred in the Fresno district, one being a permanent resident and the other, possibly, only a spring migrant.

Along the ditches and in the swamp holes of the thickly settled regions east and northeast from Fresno the resident blackbirds are apparently almost typical Bicolors, judging from the plumage; and this form also occurs commonly in many of the west side swamps where it breeds in large numbers. However, in March each year there appears in the salt grass pastures southwest of Fresno an assemblage of blackbirds that seem to differ in habits as well as appearance from those found elsewhere. The males, even when apparently fully matured, have the red feathers of the epaulettes broadly margined with buffy, while the females are very much lighter, especially on the under parts where the black streaking seems very narrow giving the birds a strangely pale appearance.

I have always been impressed with the tendency of these birds to go about in small silent companies, feeding among the cockle burrs and other weeds along the ditches and about the shallow ponds. There are certain characteristics, hard to describe, that to me make these birds seem quite unlike those found in other parts of the valley.

I have never been able to carry on investigations sufficient to determine whether these birds breed in this region or merely pass through in the spring. A series of specimens from the various parts of the valley taken through the four seasons would probably prove enlightening, but has as yet not been assembled. The writer, however, collected at random a female, an immature male, and an adult male, the three now being in the Museum at the University of California. In a recent letter Mr. Joseph Grinnell informs me that in point of plumage these specimens are quite typical of "Bicolor", but as regards measurements of bill they more closely approach the San Diego Red-wing. (See Mailliard, CONDOR, XII, pp. 63-70.)

The following notes refer to the resident Red-wings of whatever subspecies they may later prove to be. The earliest date that I have for the nesting of this blackbird is April 5, 1908, when a scattered colony was found in a growth of tules bordering small ponds caused by the overflow of a flume five or six miles east of Clovis. A dozen or more nests built among the partly dead stalks and averaging about one foot above the water, held eggs that varied from fresh to well incubated. From this date until the last of June—the 27th to be exact—fresh eggs have been found. Almost every clump of tules in the various sinks and ponds is made use of by nesting blackbirds, while in many instances a colony

will take possession of a grain field, building their light, basket-like structures amid the swaying wheat or barley stalks, from six inches to two feet above the ground.

Not infrequently this species departs from the usual customs that have been followed for so long, and nests in treetops. One such colony found May 25, 1906, was occupying some willows along a canal, one nest was fully thirty feet from the ground and resembled a kingbird's home, except that several long streamers of dry tule strips were left dangling and swaying in the breeze, making the nest very conspicuous. That this site was chosen from preference and not from necessity was clearly evident, as there was a growth of tules all along the edge of the canal, and a half section of wheat adjoining. Another colony chose nesting sites among the thick foliage of a long row of fig trees, the nests being situated from twelve to twenty feet above the ground. In driving along the road after the leaves had fallen from the trees I counted eighteen nests in a short section of the row. Almost under these trees was a small ditch in which water stood nearly all summer, and which was partly concealed by willows, tules, and sedges; but perhaps the close proximity of a schoolhouse had taught the birds to elevate their nests and conceal them as well.

Nests of the Bicolored Blackbird are well-woven, light but substantial, structures, composed of dry grass stems and tule stalks, plastered with mud and lined with finer dry grass. In probably ninety percent of the nests examined four eggs constituted the set. Sometimes, especially late in the season, sets of three are deposited, but out of hundreds of nests that have come under my notice I have yet to find a set of five eggs. Probably two or more broods are raised in a season, as a nesting colony seems to be in a continual state of operation for about three months in the year and nests with incomplete sets of fresh eggs are frequently found within a few feet of others that hold large young birds.

Throughout the winter these blackbirds rove about the valley seeking feeding grounds, often congregating in large numbers in fields that are being cleared of weeds, or following a string of plows, along with a host of Brewer Blackbirds.

Farmers regard this bird with considerable disfavor on account of its fondness for newly planted grain, and because of its attacks upon ripening Kaffir, or Egyptian, corn. In districts where large fields of alfalfa are under irrigation these birds are of much service in destroying various bugs and worms.

TRICOLORED BLACKBIRD. *Agelaius tricolor* (Audubon).

Tricolored Blackbirds, although occurring commonly in the Fresno district, are much more local in distribution than any of our other blackbirds; and while they scatter out over the greater part of the lowlands of the valley during the winter months, they appear to be confined to certain favorable sections when the breeding season is at hand. It is not unusual to find a few of this species associating with the large flocks of mixed blackbirds that are so often seen in winter, but for the most part the Tricolors seek no company aside from that of their own kind.

During the month of March great hordes of Tricolored Blackbirds fly northward in what is evidently a local migration. Every morning, from daylight until after sunrise, they pass over at frequent intervals; sometimes half a dozen birds

together and again in large compact flocks. If the weather is clear they fly at a height of over one hundred feet from the ground, but on foggy mornings they whiz along skimming just over the surface of the earth, in a flight that is very rapid for blackbirds. At such times they are entirely silent, in surprising contrast to the loose, straggling bands of Bicolors that go creaking along before dark on many a fall evening.

* This species was found breeding on June 8, 1907, in a large clump of rank tules that were growing in about four feet of water in a pond above Letcher. There were some young birds, but in about two hundred nests there were either three or four eggs, with a few sets of five. All appeared uniformly and very highly incubated. The almost deafening uproar produced by these birds in an attempt to sing *en masse* was heard for two hundred yards and it was this wonderful medley of vocal efforts that attracted me from afar, although the tules were concealed by a dense canopy of willows. I have yet to hear the bird that can produce a more unmusical, strident series of notes than a Tricolored Blackbird, and when two or three hundred unite to vociferate in concert, the result absolutely defies all description—yet I would willingly listen to them for hours. The very harshness seems to appeal to a bird lover, when more musical bird songs would pass as commonplace.

Another large breeding colony was encountered on April 30, 1907, about eight miles north of Wheatville. For a more detailed account of the habits of *Agelaius tricolor* the reader is referred to THE CONDOR, IX, 1907, p. 177.

WESTERN MEADOWLARK. *Sturnella neglecta* Audubon.

As our Meadowlark is being made the subject of a special investigation the author will leave the discussion of its economic value to those more competent, and will simply state that this species has, in some manner, fallen into very bad repute with farmers throughout the county, who seem to unite in urging its destruction. Certain it is that these birds show a marked partiality for newly sprouted grain, especially oats, but to just what extent they damage these crops is a matter as yet not clearly determined.

In the areas that have been thickly settled this species has decreased in numbers quite noticeably during the past ten years, but it is still an abundant resident wherever large fields remain, or where grain or alfalfa ranches are to be found.

Scattered during the summer months in pairs or small companies, this species often assembles late in the fall in quite large flocks. October 10, 1905, just at sundown I witnessed a flight of Meadowlarks unlike anything I had ever seen. A very large flock of these birds, estimated at about one hundred and twenty five, came sweeping in from a half-section of stubble, and settled for just a moment in an adjoining vineyard; then the whole mass arose again and in a compact body flew back to the stubble. In every movement this flight was suggestive of ducks and the flight resembled a flock of Sprigs coming in from some irrigated wheat field, settling for an instant on a pond and then again taking wing.

While Meadowlarks, no doubt, nest abundantly throughout the valley, I have never been able to find anything like the number of nests that would be expected to exist; but as they are very artfully concealed it requires most careful search to discover them unless the brooding bird is accidentally flushed.

May 18, 1902, during a very high wind that prevailed for the greater part of the day, I was surprised by a Meadowlark flying up almost from under my feet, and I soon found her nest among the rank grass partly concealed by a clod. As this nest was in a very damp location the lining was thoroughly saturated, and it seems hardly probable that the bird could have maintained a temperature sufficient to have successfully completed the task of incubation. There were five eggs of the Meadowlark in the nest, and two of the Valley Quail, all being slightly incubated.

About the middle of the following June I noticed a Meadowlark alight among some dry grass and select a piece of nest material with which she took flight toward an alfalfa field not far away. By watching where she settled I thought I had marked down the location of her nest, and this proved to be a correct surmise; for on June 26 I had little difficulty in flushing the female from a bulky, canopied nest in which there were five fresh eggs.

Other nests have been seen in alfalfa fields and among thick growths of weeds; but what I consider the most unusual site was located April 23, 1908, when a Meadowlark was plainly seen sitting on her nest while I was yet over one hundred feet distant. This nest was found near a berry patch, the ground having been plowed early in the winter, later a sparse, stunted growth of oats springing up. At the time the nest was found the oats were not over six inches in height, and so thin and scattering as to afford almost no protection or concealment. In a slight hollow, not over three-quarters of an inch in depth, were four eggs resting on the bare, damp ground, without a semblance of nesting material either over, under, or around them.

The song of the Western Meadowlark, heard just at sunrise on a bright February morning as the bird perches on a fence post, is one of the most pleasing and musical of all bird voices. The silencing of it by removing legal protection from the songster would be little short of a calamity.

BULLOCK ORIOLE. *Icterus bullocki* (Swainson).

The males of this species usually arrive in the vicinity of Fresno during the last week in March. This year (1911) the first one came on the twenty-fifth. In 1906 they made their appearance on the twenty-sixth, and in 1908 it was March twenty-eighth. Some of these first arrivals frequent the trees about town and those along canals in the country, while many small companies of from two or three to half a dozen may be found passing the time among the wild flowers and bushes on the grassy, treeless slopes near the river. It is nearly the middle of April before the females are noticeable.

The great majority of our orioles depart about the twentieth of July, or at the close of the nesting season. No doubt a scarcity of food during the hot, dry months of August and September is responsible for the short stay of these birds. Probably they scatter out and range up into the higher hills, as many summer residents do in the southern part of the state. This species has been noted in small numbers along the San Joaquin River during August.

My earliest record for a complete set of eggs of the Bullock Oriole is of a set of five found May 8, 1905, in which incubation was scarcely noticeable. From that date on through all of May and June the birds are busy with household duties. Four or five eggs generally constitute a set, but three is by no means an

uncommon number especially during June. Occasionally six eggs are deposited.

May 30, 1911, four nests were examined of which the first one held four slightly incubated eggs, another contained large young birds, in the third nest was a brood of very small birds, while the contents of the fourth proved to be two fresh eggs.

This species nests most frequently in the willows along canals and ditches, but eucalyptus and cottonwood trees are also often chosen. At least one pair of orioles are almost sure to locate for the summer about nearly every farm house, taking possession of any kind of tree that is to be found there. Some nests are built in upright forks of very small willows in swampy places, but in such cases they are always suspended from small twigs above and are not dependent for support upon the large branches of the fork, the latter, seemingly, being used for protection from wind and enemies. I have found such nests as low as eight feet from the ground, but the typical nest of *Icterus bullocki* is suspended from the extreme tip of a willow branch from twenty to thirty feet up, where an examination of the nest is an almost impossible task.

Nests in this section are composed largely of horse-hair, with string, if it is obtainable, woven into the framework. One or two specimens have been found that were made almost entirely of wild oat heads.

These horse-hair nests hanging to the leafless branches all through the following winter often prove a death trap to other birds, and the writer has frequently seen a linnet or other small bird hanging by the neck from an old oriole's nest. Last winter, after much throwing of sticks, my smaller brother and myself brought down such a nest from a height of about twenty-five feet and were not a little surprised to see that the bird, which was suspended by a horse-hair fastened securely around its neck, was none other than a Sierra Junco. I do not know how this terrestrial species could have met with such an accident unless it had sought shelter at night in the nest.

The small yellow butterfly that is found in such numbers in alfalfa fields at certain seasons seems to be especially attractive to the orioles, and countless dozens of them are devoured. I have seen this bird in the role of flycatcher at such times, flying from a fence wire and seizing a butterfly on the wing, a rather clumsy effort but serving the purpose.

It has been suggested that we cannot count the date of the arrival of this oriole in the spring from the time its note is first heard, unless the bird is actually seen, as the Western Mockingbird is said to imitate the notes in a most deceptive manner just before the orioles arrive. With that thought in mind the writer eagerly awaited the month of March this year, but failed to prove the correctness of that statement. A pair of Mockingbirds spent the entire winter in the trees along the street near his home and although they were heard singing, more or less, all through the winter, not a single note was heard that in any way resembled the call of an oriole, so I concluded that these particular birds either did not know or had forgotten the oriole's song. In view of this fact it seems reasonable to conclude that even had the notes that were heard on March twenty-fifth proven to have been produced by a Mockingbird it would, nevertheless, have been sufficient evidence of the arrival of at least one oriole.

BREWER BLACKBIRD. *Euphagus cyanocephalus* (Wagler).

Probably because the region about Fresno does not offer a sufficient amount of suitable food and the protection of trees in which to nest, the Brewer Blackbird has not been found breeding within the region treated in this work, although it is one of our most common winter visitants.

The arrival of these birds in the fall has been noted as follows: September 20, 1903; September 15, 1904; September 7, 1905; September 16, 1906. Thus this species may be confidently looked for after the first week in September; after this it gradually becomes more numerous, but the maximum abundance is seldom reached before the first of December. In the spring these blackbirds remain until nearly the first of May, my latest records being April 30, 1904, and April 29, 1911; but from the first week in March they became noticeably scarce.

Just where these black-coated hosts go during the breeding season is a matter that has not been fully determined. I have found a small colony breeding at Shaver Lake in the Sierras (CONDOR, XI, 1909, p. 83), but the great majority must resort to the oaks of the foothill regions. August 9, 1905, I noted quite a number of Brewer Blackbirds above Millerton on the San Joaquin River, some few miles north of Friant. There were also numerous old nests scattered along through the willows, and these nests were much like the usual structures built by this species.

From what I have been able to observe I think the Brewer Blackbird is a beneficial species, and should not be charged with the destructiveness of which the blackbirds of the genus *Agelaius* are accused. During the winter and early spring this species has a habit of following a plowman and feeding upon the grubs and worms that are exposed. If the workman walks along without appearing to notice their presence these birds will often follow at a distance of not over two or three feet, each one endeavoring to be the first to seize any unfortunate grub that comes to light; but should the plowman turn about or even hesitate for just a second the birds fall back with a questioning "k-chick."

Open ground, especially summer fallow, is preferred by these birds, and an acre or two of pasture land is their especial delight. Every ranch has a flock that spends the winter feeding about the corrals.

One spring vast numbers of rose beetles invaded the country about Clovis and after destroying the rose flowers they took to the vineyards, where they did considerable damage to the foliage by boring numerous holes through the leaves, causing them, eventually, to wither and drop off. Every day for nearly a week a great flock of Brewer Blackbirds hovered over a certain vineyard that I had an excellent opportunity to observe. Crawling over the branches or alighting on the topmost shoots, these black plumaged birds were conspicuous objects against the green of the tender new foliage. As a result of the efforts of the birds, the vineyard was, in a short time, almost entirely free from the beetles. Truly this was a valuable service well worth recording.

LINNET. *Carpodacus mexicanus frontalis* (Say).

After observing the habits of the friendly little Linnet, or House Finch, as this bird is often called, the writer early became convinced that the number of individuals of this species occurring in the Fresno district showed little or no

increase from year to year, notwithstanding the fact that conditions appeared to be favorable for the maintenance of a much larger number of these birds than were to be found at any one time. With seemingly an almost unlimited supply of food during the greater part of the year, and a long, warm summer, it was not an easy matter to determine why Linnets were not really abundant at all times. Among the possible causes the English Sparrow was considered but was soon freed from suspicion, as these imported pests are established at only a few widely separated points outside the towns.

It has been only during the past two or three years that anything like a satisfactory explanation has presented itself: I now attribute the failure of our Linnets to increase in numbers to the fact that there appears to be, each season, a large proportion of non-breeding birds represented among the Linnet population of the valley.

During early February each year for the past three seasons I have noted the appearance of from twenty to forty of these birds in a warehouse where raisins are stored, but to which an easy access is gained through a foot or more of coarse wire mesh, all around the building just beneath the eaves. I am positive that none of this flock nested anywhere about the building, and am convinced that there were no breeding birds represented. This belief is based not only on the fact that this flock remained until well along in June but also upon the examination of one or two specimens.

Although the flock each year was made up of about an equal number of males and females yet they were all, to the best of my knowledge, unmated. It must not be thought that the writer is endeavoring to convey the impression that Linnets are anything but abundant residents in all the region about Fresno wherever the original arid conditions have been modified, for, without a doubt, they are, in point of numbers and wide distribution, the most common of birds in this part of the state outside of the towns. There, of course, the English Sparrows hold undisputed sway.

It seems unnecessary to describe the habits of a bird of so wide a range, especially since there appear to be no noteworthy variations in this region. In ten years of observation I have only seen two Linnets that were unlike the usual specimens in coloration, one of these being a male noted on May 27, 1906, in which the usual red areas were a brilliant yellow throughout. The other was an albino of a rather streaked pattern but very noticeable among a flock of normally colored individuals.

A nest of this species with five almost fresh eggs, found March 31, 1908, is the earliest nesting record that I have from this district. April, May and June, all have their quota of nesting Linnets in about equal numbers. I have found sets of four eggs to predominate, but five is by no means an uncommon number.

WILLOW GOLDFINCH. *Astragalinus tristis salicamans* (Grinnell).

"Wild Canary" is the name by which this handsome little bird is most commonly known, and it is a matter for congratulation from the standpoint of a bird lover at least, that these cheery yellow-plumaged birds have noticeably increased in numbers during the past few years. The name "willow" seems to have been well chosen, as the favorite haunts of this species are along the canals

and ditches, or wherever else a sufficiently marshy area exists to support a growth of willow saplings.

These goldfinches appear to be distributed everywhere through the lowlands of Fresno County, wherever conditions are suitable for them, and when not found along streams they may often be seen in peach orchards and in trees around dwellings. Their subdued whistling call is often heard in early springtime in the trees along the city streets, but it sounds more cheerful on some foggy winter afternoon as a mixed flock of linnets and goldfinches gleans again through some sunflower patch for the few seeds that may have been overlooked on a previous search.

Any time from the last week in April until the first of July a pair of Willow Goldfinches may begin the construction of a nest, which later will contain four or five eggs of the palest blue color. These nests are beautiful, compactly woven cups, made of light plant fibers, bark strips, and cotton, and fastened in the forks of a willow or peach tree at a height of from six to fifteen feet from the ground, as a rule. The plainly clad female presents quite a contrast to her bright-plumaged mate, but the most interesting color contrasts are to be found in the males just before the breeding season, when they are in the midst of the pre-nuptial moult.

GREEN-BACKED GOLDFINCH. *Astragalinus psaltria hesperophilus* Oberholser.

Apparently this species and the Willow Goldfinch require different environmental surroundings. While the latter has become much more numerous as a result of the settling up of the country, this bird, never especially numerous in this region, has responded much less favorably to cultivation, and has decreased in numbers, to some extent, during the past ten years.

When the country was given over largely to grain ranches, with occasional weed-grown, uncultivated areas here and there, this goldfinch found conditions much more to its liking and was more often to be met with. Wherever sunflower patches occur it is still to be found, and during the winter months it often associates with Linnets, going about in large flocks. Probably much the same sort of food is sought by each of these species.

LAWRENCE GOLDFINCH. *Astragalinus lawrencei* (Cassin).

Excepting the Cedar Waxwing, there is probably no bird more erratic in its occurrence than this species. The few individuals that I have observed have all been noted in the month of April, with the exception of a single bird seen near Clovis, June 16, 1907. On that date a single individual was seen in a patch of weeds, where it was associating with Linnets and other goldfinches. I had a close view of it as it hung head downward, deftly extracting seeds from a woolly weed.

April 29, 1911, I found one male and at least three females of this species in a weed grown corner of an oatfield on the river bank below Lane's Bridge. There were also a number of very highly plumaged Willow Goldfinches and a few Linnets feeding in the same place.

I have heard of but one instance of the Lawrence Goldfinch nesting in this region and that was furnished me by Mr. Chas E. Jenney who found a nest with four slightly incubated eggs on April 11, 1906. This structure, which was built

in an almond tree in his yard, did not differ greatly in appearance from nests of our other goldfinches, but the eggs were perfectly white in color, a feature that at once distinguishes them from the pale blue eggs of the two other species of *Astragalinus* occurring in Fresno County. The habits of this gray-plumaged and black-throated finch apparently do not differ greatly from those of other members of this genus.

ENGLISH SPARROW. *Passer domesticus* (Linnaeus).

Gladly would we ignore this invader from a foreign land, but the fact of its presence cannot be overlooked. It should be the cause of no little alarm, since these sparrows are becoming well established in the country, after having literally taken possession of the city. During the gloomy winter days the little flocks that feed so confidently about our yards in town often endear themselves to us, but the following spring, when we look in vain for the native birds that should nest with us, our opinion of the English Sparrow is frequently much altered. Only the Mockingbird seems to be able to maintain his place within the city, while the linnet, goldfinches, and orioles have decreased in numbers as breeding birds. I have yet to learn of anything commendable in regard to the English Sparrow, while its habit of crowding out our own feathered friends is sufficient to condemn it.

WESTERN VESPER SPARROW. *Pooecetes gramineus confinis* Baird.

The Vesper Sparrow is one of the several varieties of small, inconspicuous, brown sparrows that remain throughout the winter. The earliest date upon which I have observed this species in the fall was September 12 (1903), and arrivals should be confidently looked for by the twentieth of that month ordinarily. They have been known to remain as late as April 7 (1911), but as a rule nearly all have disappeared by the last day of March.

Like most of the ground-feeding sparrows, this bird must be highly beneficial as it eats quantities of weed seeds of various kinds.

Often, in March, I have observed one of these sparrows perched on a clod and pouring forth its pleasing song, or engaging in short animated flights, the white outer tail feathers serving to identify the species at some distance. Their song resembles the vocal efforts of a Western Lark Sparrow, perhaps, more than anything else, yet it lacks the rich fullness of the song of the latter, and seems to have less of finished quality. Weedy, waste fields and pastures are this bird's favorite haunts, but it is not strictly terrestrial, and is often seen upon a low bush or fruit tree, if one is afforded near its feeding ground.

This part of the state is probably visited by both the western subspecies of the Vesper Sparrow, *confinis* and *affinis*, but the Oregon Vesper Sparrow seems not to have been detected here as yet.

WESTERN SAVANNAH SPARROW. *Passerculus sandwichensis alaudinus* Bonaparte.

As one tramps around through tall dry grass along ditches and fences, through alfalfa fields and along the borders of vineyards, this little sparrow often flushes from almost under the very feet of the intruder; and we have just a glimpse of the plain, brownish colored little bird as it rapidly zig-zags

along, just skimming above the ground, and after a short flight pitching into the first bunch of weeds that offers concealment.

Sometimes a startled, squeaky note is heard as the bird takes flight, the only attempt this sparrow ever makes to voice its feelings during its winter sojourn with us. Except when startled into these sudden flights it spends all its time on the ground, and nearly always in grass where it cannot be seen; so that one might remain unaware of its presence for years unless an especial search was made for it.

The Western Savannah Sparrow is just one of many plain little sparrows and has nothing about its appearance or habits to render it noticeable, yet it is withal, a most interesting bird and well worth observing. No doubt a careful study of it would prove immensely interesting and worth while.

I have seen this species as early as September 24 (1905), and Mr. Grinnell has recorded it from an adjoining county as late as May 4 (CONDOR, XIII, 1911, p. 110).

WESTERN GRASSHOPPER SPARROW. *Ammodramus savannarum bimaculatus* (Swainson).

Western Grasshopper Sparrows are probably not as rare in the winter as might be supposed, but their habits render them inconspicuous and they are easily overlooked. Old, weedy fields, weed-grown vineyards, and berry patches are their favorite resorts, where they are found with Western Savannah and Western Vesper sparrows. I have found it very difficult to identify with certainty some of the smaller sparrows in the field, or to distinguish between one or two of the several terrestrial species as the birds skulk through the weeds or dart away from under the feet of a pedestrian, only to settle again a few yards away after an erratic and apparently aimless flight. In the case of the present species, however, I have observed a tendency to run away rather than to fly, and in fact it requires some fast walking to get them to take wing.

February 18, 1911, I secured a male of this species near Clovis. The locality was a weed-grown young vineyard from which the brush had been pruned and allowed to lie where it fell.

I have suspected that possibly, on rare occasions, the Western Grasshopper Sparrow might be found breeding in this vicinity, and based this belief on the following incidents. One year, in late August, I had occasion to cross a large summer-fallow field, and when about at the middle came upon the bed of a slough that was then dry but had carried quite a volume of water earlier in the season. For twenty yards or more on either side was a thick growth of tall sunflowers and cockleburrs, and while passing through these I happened to notice a small nest neatly concealed among the weeds at the base of a sunflower stalk. This nest was undoubtedly the work of some small sparrow but was unlike any with which I am familiar, being much too small for a nest of our most common ground-nesting member of this family. In fact, it answered very well to the descriptions of nests of the Grasshopper Sparrow, but as there were no birds present at the time I had no means of determining, for a certainty, what species had constructed it.

On the eighth of June, 1912, the writer enjoyed a day in the field with Mr.

J. Eugene Law. We explored some overflowed land about four miles east of White's Bridge where we encountered a scattered colony of Grasshopper Sparrows. They were frequenting ground grown up with clumps of a species of bunch grass, and bordered by quite an extensive area supporting some kind of "sage-brush." During the time we were in that vicinity we flushed several of the birds and also heard their insect-like song. The late date and the fact that the birds appeared quite at home seemed to indicate a breeding colony of at least three or four pairs, but we failed to find any nests.

WESTERN LARK SPARROW. *Chondestes grammacus strigatus* (Swainson).

In this age when the bird student marks with regret the gradual but certain decrease in the numbers of so many of our birds, as a result of the rapid settling up of the few remaining tracts of uncultivated land, it is certainly a pleasure to note that here we have a species that has responded favorably to a changed environment, and seems to be actually on the increase.

Formerly, when our vast grain fields extended for miles in all directions, and the stock ranges had not felt the influence of the plow, then, amid far more arid surroundings than at the present time, we found Western Lark Sparrows living in company with Ground Owls and horned toads; and thriving on grasshoppers and such wild grain and seeds as nature provided.

Since the last few years have wrought such a transformation, this same species has accepted the change without any apparent hardship; and the Lark Sparrows now lead happy and useful lives amid the orchards and vineyards that have sprung up everywhere over the valley like a crop of mushrooms that often appear in a single night. Although a resident, and common throughout the year, this species is more abundant during the summer than during the winter months. The Lark Sparrow population also varies somewhat from year to year.

Aside from the inimitable Western Mockingbird, I know of no other bird that sings so often at night. On more than one occasion I have refrained from sleep in order to listen to the notes that ring out with such wonderful sweetness when heard in the still night hours when all other bird voices are hushed. The peculiar "burring" note so characteristic of this species serves to distinguish the Lark Sparrow's vocal efforts from the song of any other of our birds. While the same note appears in the songs of several of the other finches, yet in none of these is it present in such numbers; nor do the other birds sing so persistently as this friendly "fan-tail," for by that name many a schoolboy knows the Western Lark Sparrow.

Excepting the Linnet, I know of no bird that makes use of a greater variety of nesting sites, and no doubt the species owes its abundance at the present time, in a measure, to the diversity of positions in which it conceals its home. Nests have been found on almost bare ground, in alfalfa fields, and among weeds, the amount of concealment varying from almost none at all to so much that the nests could be considered artfully hidden. Other nests have been noted in bushes and grape vines, sometimes just a few inches above the ground and from that height up to six feet or more; still other pairs choose an orchard or shade tree and place their rather bulky structure as high sometimes as ten feet, but more often not more than six feet up.

I have observed nests built up to a height of four or five inches and placed on hard dry ground, and have seen others that were sunken in an excavation so deep that the female bird on the nest was hardly visible. Probably seven out of every ten in this part of the valley are well hidden on the ground, at the base of a vine in a vineyard.

The nests are usually well made, there being a substantial outer structure of dry weed stems, grass and rootlets, lined, almost without exception, with long black horsehairs.

In my experience the Lark Sparrows are quick to resent any molestation of their home, not infrequently deserting, even when the nest is not touched; but the following incident will show that such is not always the case. Late in April, 1907, a nest was found with one fresh egg. Two days later I visited the place and could not find either of the owners, nor could I account for one of the eggs being on the ground fully eight inches from the nest while the other two were just outside and resting on the edge of the nest material. The horsehair lining was undisturbed so I replaced the three eggs. The following day one of the birds was occupying the nest again, and had added another egg to the set.

In one case that came under my observation the eggs hatched on May 4, and the last young bird left the nest on the 15th. It is interesting to note that the elongated type of eggs that are occasionally met with, resemble in size, shape and markings, certain specimens produced by the Bullock Oriole, although the usually almost spherical eggs of the Western Lark Sparrow can be distinguished at a glance from those of any other bird.

The following table will show the nesting dates recorded by the author in the past ten years:

Date		Contents of Nest		Incubation
May	16 1902	3	eggs	well begun
April	30 1903	4	"	somewhat advanced
May	12 "	4	"	fresh
"	12 "	5	"	slight
"	5 1904	3	"	well begun
"	3 1905	3	"	commenced
"	8 "	4	"	begun
June	10 "	2	"	advanced
July	14 "	3	young	5 or 6 days
April	25 1906	5	eggs	slight
"	28 "	4	"	fresh
"	29 "	4	"	fresh
May	3 "	4	"	advanced
"	4 "	4	"	begun
"	8 "	4	"	advanced
"	11 "	4	"	begun
"	11 "	4	"	begun
"	14 "	4	"	advanced
June	9 "	3	"	begun
April	26 1907	4	"	very slight
"	28 "	4	"	begun

	Date		Contents of Nest		Incubation
"	28	"	4	"	fresh
May	2	"	4	"	well along
"	2	"	4	"	slight
"	7	"	4	"	begun
"	8	"	4	"	well along
"	9	"	3	"	well begun
"	9	"	4	"	well begun
June	22	"	4	"	advanced
April	28	1908	3	"	well along
"	30	"	3	"	well begun
May	4	"	4	"	advanced
"	6	"	3	"	slight
"	10	"	3	"	advanced
April	29	1910	4	"	well begun
May	8	"	4	"	well begun
"	15	"	4	"	advanced
June	12	"	4	"	about half
April	30	1911	5	"	begun

INTERMEDIATE SPARROW. *Zonotrichia leucophrys gambeli* (Nuttall).

Without the slightest doubt this form of the White-crowned Sparrow is the commonest member of the sparrow family occurring in the valley during the winter months. Every brush pile, hedge row, orchard or weed grown fence corner has its flock varying in size from a half dozen to literally hundreds of birds according to the amount of protecting cover near at hand.

The startled squeak of one of these sparrows as it rises from the grass is far from musical, but the subdued caroling of a half hundred birds in concert, as they dry their plumage on a brush pile, after a shower, is one of the most pleasing efforts that could greet the ear of a bird student.

The Intermediate Sparrow, by which name this species is most commonly known though it is also called Gambel Sparrow, usually arrives in the vicinity of Fresno during the latter part of September. In 1905 the first birds were seen on the 17th of that month; in 1911 they appeared on the 24th. The last few days in April, as a rule, witness the departure of the great majority of these sparrows, but occasionally one or two individuals remain for several days after that date. Although the late April weather in 1904 was quite warm, it did not hasten the departure of these sparrows and they were still very numerous on May 2. The weeds along fences near Lane's Bridge had a full quota of sparrows April 9, 1911, but a subsequent visit, on the 29th, revealed only a few scattered birds.

It would probably not be too high an estimate to state that these sparrows comprise fifty percent of the food of all the Sharp-shinned Hawks that frequent the lowlands in midwinter. This fact alone is sufficient grounds for condemning that little tyrant, for it seems that an enormous quantity of weed seeds must be consumed each day by this army of ground feeding sparrows.

Many a gloomy day has been enlivened for the author by the presence of a flock of these white-crowned little creatures about the yard or in the garden.

for they always seem more friendly during the most foggy weather when other birds are all too inconspicuous.

GOLDEN-CROWNED SPARROW. *Zonotrichia coronata* (Pallas).

How frequently, in the study of ornithology, does the unexpected happen! On the fifteenth of last March the writer greatly enjoyed a brief visit from Mr. Joseph Grinnell, of Berkeley, and in the forenoon we drove out north of Fresno five or six miles. I had just informed him that the Golden-crowned Sparrow was one of the rarest of our winter visitants, and that only two days before I had noted my first bird in ten years. Hardly had I finished speaking when a half dozen or more of these birds arose from some weeds near the roadside and flew to a row of willows along a ditch. This, to me very unexpected appearance, must have caused my companion to doubt the thoroughness and accuracy of my previous observations!

March 13, 1911, I saw two Golden-crowns on the lawn in front of my home. They were noted before sunrise in company with several migrating Western Chipping Sparrows. Previous to that time I had watched for them during ten winters but had never detected even a single individual, although Miss Winifred Wear tells me that she has a number of records from November 10 (1910) until April 26 (1908). Until more of these birds have been observed the writer cannot record the Golden-crowned Sparrow as anything but a rare winter visitant.

WESTERN CHIPPING SPARROW. *Spizella passerina arizonae* Coues.

Although an abundant spring migrant through the valley, this little sparrow is one of the least common of our summer visitants. Each day during the last half of March a goodly number of these red-capped little fellows appear, usually as soon as it is daylight, and remain for several hours; but by noon all have disappeared, and until the following morning brings another company, an observer would not suspect the presence of this species anywhere in this part of the valley. During these brief forenoon calls the birds usually feed about lawns in the city, or trill musically from the shade trees along the street. March 28, 1911, I counted six of these sparrows on the lawn in front of my home and there were a dozen more in the yard. The first arrivals were noted on March 13 that year.

Although I have several times seen Chipping Sparrows at a time when the species should be nesting, yet only one instance of actual breeding has come within my notice, on June 8, 1912, when a nest with four half-incubated eggs was found near Clovis. June 23, 1905, a single Western Chipping Sparrow was seen in company with several Western Lark Sparrows, but there was nothing to indicate that it might be a breeding bird.

All through the month of June, 1911, from one to five or six of these sparrows were to be seen in the Fresno County court house park where they hopped along the grass chipping contentedly. They appeared thoroughly at home, yet I doubt if they nested in the park.

As this bird lives, to a great extent, on food picked up from the ground, it can do no harm during its short stay in the spring. It might be easily overlooked entirely by one not familiar with its habits and song.

BREWER SPARROW. *Spizella breweri* Cassin.

Brewer Sparrows, although almost unknown in the region about Fresno up

to five or six years ago, have seemingly become well established throughout the vineyards northeast of Fresno, and elsewhere also. The presence of this bird was first suspected in early May, 1906, when a small, long-tailed sparrow was frequently seen and heard in a vineyard near Clovis, but not until June 5 was the identity satisfactorily established. On that date a nest with three eggs was found. An account of the habits of this bird was published by the writer in *THE CONDOR*, xii, 1910, p. 193.

At the present time the Brewer Sparrows are much more generally distributed, and may be found in nearly all the vineyards near the city. They were found near Malaga the first week in July, 1911, and near Tarpey during May. In a certain small willow-grown swampy area near Clovis, on September 4, I found quite a flock of small sparrows in a thick foliated tree. They were in full song and their vocal efforts were not at all unlike a chorus of Intermediate Sparrows, but lacked some of the rich quality of the latter. Individuals were constantly appearing on the outer branches, singing a few notes and then diving down into the heavy foliage below, when others took their places. I was not a little surprised to find that these were the little mouse-like *Spizella breweri*, as I had always been led to believe that this species frequented only the sage brush of dry hillsides, and they seemed out of place in a swamp where Bermuda grass and willows suggested song sparrows more than anything else.

Although the ornithological books do not give this bird as a resident as far north as Fresno, yet it certainly does remain with us in limited numbers, as was evidenced by the author finding several of them in a weedy old berry patch near Clovis on December 26, 1910.

As these little birds do no damage whatever, they should be encouraged to nest in vineyards, as they must glean many an insect from the leaves during the long summer days.

SIERRA JUNCO. *Junco oreganus thurberi* Anthony.

Surely everyone is familiar with the little black-headed snowbirds that seem to especially rejoice in the coldest, most stormy weather, this preference having given rise to their common name. Among those who live in the foothills the idea prevails that the assembling of a flock of these birds certainly presages a snow-storm.

Juncos nest abundantly in the Sierras in Fresno County, but appear in the valley only during the winter months. My earliest record for their appearance in the fall is October 24, 1905; but I feel certain that they had appeared earlier than that. In the spring they remain until the middle of March and sometimes later. April 11, 1911, three or four juncos were noted in some willows near Clovis. As this species feeds like the sparrows on the ground where, no doubt, it destroys numberless weed seeds, it should be encouraged to frequent vineyards and pasture lands.

The writer has frequently observed an entirely different junco, probably *Junco hyemalis hyemalis*, the eastern Slate-colored Junco, but until a specimen has been preserved for identification this point cannot be determined. These individuals are always more shy than the birds with which they associate, and upon the slightest provocation take to the nearest brush or trees. They appear after

severe storms as lone individuals in flocks of the Sierra Junco, and soon disappear again.

CALIFORNIA SAGE SPARROW. *Amphispiza nevadensis canescens* Grinnell.

The occurrence of this bird in Fresno County was brought to my notice by my friend Joseph Sloanaker who found it to be the most common winter sparrow in the vicinity of Raisin, with the possible exception of the Intermediate White-crowned Sparrow.

The plains in that part of the county are covered with clumps of bushes characteristic of the semi-arid regions, and apparently exactly suited to this desert-loving bird.

I have no information as to whether or not this sparrow, as recorded from Raisin, is a breeding species, but conditions there seem favorable; future field work will have to determine this point. The first record of the occurrence of the California Sage Sparrow in this region appeared in *THE CONDOR*, XIII, 1911, p. 76.

HEERMANN SONG SPARROW. *Melospiza melodia heermanni* Baird.

The presence of water is such an essential to the welfare of this sparrow that the bird's range may easily be determined by learning where water is to be found. As has been pointed out by Mr. Grinnell (*CONDOR*, XIII, 1911, p. 110), the irrigation system that is at present extended to so many points in the valley, has been the means of giving this bird a much wider range than it had in former years. Reasoning from the theory that any given locality is tenanted by as many birds as it will support, we may safely assume that there are at present at least three times as many song sparrows in Fresno County as there were in 1900.

Definite breeding stations within the Fresno district may be mentioned as follows: Fresno, Clovis, Letcher, Lane's Bridge, Malaga, and Wheatville. Doubtless many other points could be added to this list with a little field work.

This is a bird that is easily overlooked, as it prefers the seclusion of rank grass, tules, and willow saplings. It sometimes comes into view, however, and pours forth its monotonous, yet pleasing, song from a swaying tule stalk from which the singer can hurriedly dive to a place of concealment at the slightest alarm. The vocal efforts of this bird always suggest the cool, moist, willow-grown areas where the blackbird's "kong-ker-ee" and the whistling notes of the Western Yellowthroat make a fit accompaniment. A sort of sentiment attaches to the song sparrow, having a tendency to cause it to find favor with nearly everybody; and since it can be accused of taking neither fruit nor grain it is worthy of our protection at all times. Doubtless untold hundreds of insects that would breed in swampy places and spread out over adjoining fields and vineyards, are destroyed by this sparrow.

As this species is resident wherever it occurs, it is an early breeder. The birds begin nesting early in April and continue from that time until the last of June, my earliest and latest dates being April 8 (1911), for four fresh eggs, and June 27 (1901), for a like number in the same condition. Probably two broods are raised under normal conditions. Heermann Song Sparrows are not at all particular when it comes time to select a site for a nest, the principal requisite being a tuft of grass or bunch of leaves that will conceal the nest and at the same

time permit its owner to remain near water. I have found nests in thick bunches of grass not three inches above the water, and at other times ten feet up in willow trees, but the typical nests are built among willow shoots along smaller canals, where they average from one to four feet above the ground. Dried willow leaves enter largely into the composition of these frail nests; the lining is almost invariably of dried, round, grass stems. Four greenish, brown-spotted eggs are laid unless it be late in the season, when sets of three are not infrequently seen.

FORBUSH SPARROW. *Melospiza lincolni striata* Brewster.

These interesting little sparrows have been detected at only two points in this region. In THE CONDOR (XIII, 1911, p. 76) I recorded the taking of a specimen near Clovis on December 26, 1910; and Mr. Grinnell has recorded them in the same publication (CONDOR, XIII, 1911, p. 111) as occurring near Lane's Bridge April 9 and 10, 1911. At the latter place I had some slight chance to observe them but they proved very shy. They were frequenting a marshy place at the base of a hill, the lower slope of which was covered with a thick growth of hoarhound bushes. At the slightest disturbance these birds and a few Heermann Song Sparrows that shared the marsh with them, would betake themselves to this weed patch, and dive in at full speed. Sometimes when I had marked the exact spot where one of these birds disappeared, I would attempt to flush it by hurriedly tramping through the brush, guided by an occasional glimpse of the sparrow as he sneaked along ahead of me; but generally the birds could outdistance me, and it required no little exertion on my part to get them to take wing again. When we retreated some distance and quiet reigned again, the little sparrows could be seen dropping in short quick flights down into the swamp.

If the form *lincolni* occurs in this region it has not yet been detected, so far as I am aware.

SLATE-COLORED FOX SPARROW. *Passerella iliaca schistacea* Baird.

Slate-colored Sparrows appear to be of regular occurrence in very limited numbers during the early winter, especially from late October until the last of December, when they disappear or are rendered inconspicuous by the appearance of not a few of the larger form, *insularis*. Until more evidence is brought to light I do not think we would be warranted in rating this sparrow as a winter resident, and I am inclined to believe that the birds merely tarry here for a month or more on their way to their winter home. The difficulty of identifying with certainty, in the field, the two or three forms of fox sparrows that occur in Fresno County during the winter, has caused me to hesitate to give any definite dates for the arrival or departure of these birds. No doubt a little more systematic work would bring to light a number of interesting facts regarding their distribution in this part of the valley.

November 20, 1910, Mr. Joseph Sloanaker and myself observed two small fox sparrows in Roeding Park, and watched them for some time as they scratched among the leaves within ten or fifteen feet of where we were concealed. Four days later I saw another of what I felt certain was the same species, in a big brush pile at the edge of a weedy pasture near Clovis. This last bird was added

to my collection and was identified as *schistacca* by Mr. Joseph Grinnell, of the University of California. This was recorded in *THE CONDOR*, XIII, 1911, p. 76.

KADIAC FOX SPARROW. *Passerella iliaca insularis* Ridgway.

This is the largest of our sparrows, and in the field appears at times but little smaller than the California Towhee. It comes to us a little later than the host of sparrows that winter in the San Joaquin Valley, and does not reach the high tide of its abundance until the month of December. Even then it is at no time abundant, and soon begins to decrease in numbers. Fox sparrows of all kinds are rare after the first of the year. I have a specimen of this fine bird, taken near Clovis, December 26, 1910.

A fox sparrow collected by Joseph Sloanaker near Raisin on October 13, 1910, was identified by Mr. Grinnell as "*meruloides*," a form not recognized, as yet, by the American Ornithologists Union.

There is no more interesting group of birds than these large, richly colored sparrows, and the writer hopes to become more intimately acquainted with them.

CALIFORNIA BROWN TOWHEE. *Pipilo crissalis crissalis* (Vigors).*

Brown Towhees occur in varying numbers over much of the higher, more dry, portions of the region about Fresno, being very scarce or entirely wanting in the swampy and treeless areas. Brush and various low-growing shrubs, with occasional trees, form the ideal habitat of this species; so it is not surprising to find its center of abundance along the larger canals and at the outlets of the foothill creeks along the eastern part of this district.

Kearney Park, with its wonderful variety of trees and bushes, forms an ideal retreat, where the towhees are never molested, and where the species is represented in greater numbers than in all other parts of this district combined. Gardens and orchards are favorite resorts, but vineyards are shunned along with all the more open tracts.

The bulky horse-hair-lined nests are usually constructed in thick bushes or trees, from three to eight feet above the ground, a favorite site being a bunch of small second-growth shoots at the top of a willow stump.

The usual complement of eggs is four, but I have found several sets of but three, and in at least three different instances the birds began the duties of incubation with just two eggs to their credit. The sets of two were in each case the first ones laid, so far as I could determine. May and June are the nesting months, my earliest record being May 1 (1906) for considerably incubated eggs. A set well along in incubation was found June 30 of the same year, while all other dates have fallen between these two extremes.

The towhees are big, good-natured fellows, in no way injurious to man's interests, while they, like other sparrows, render valuable service by gleaning from the ground much that might prove harmful to agriculturists.

SAN DIEGO TOWHEE. *Pipilo maculatus megalonyx* Baird.

The ornithologist is often hard pressed by his friends, especially by those who do not make any claim to knowledge along this line, to find satisfactory explanations for some of the seeming inconsistencies that occur among the common

*This name is used in accordance with the A. O. U. *Check-List*. Possibly our towhee may be referable to the form *senicula* (see Grinnell, *CONDOR*, XIV, 1912, p. 199).

names of birds as set forth in the A. O. U. *Check-List*. After we have spent years in teaching a none-too-willing subject that a certain shy, gay-plumaged bird is a "Spurred Towhee", it is disheartening to have to inform our pupil that this same bird has suddenly discarded its well-earned name and must now be called "San Diego Towhee." Any explanation that we offer is sure to be met with some such response as "Well, what the deuce to you want to call it a San Diego Towhee for, anyway, when it is just as common in Fresno as it is down there?" Now, it must not be understood that the writer would attempt to criticise the Committee that labored so earnestly to produce the new *Check-List*, but it does here seem justifiable to retain "Spurred Towhee" rather than to adopt the name "San Diego Towhee" proposed by them.

Nowhere in the immediate vicinity of Fresno has this handsome species been found breeding, but Mr. Chas. E. Jenney has found one or two nests along the San Joaquin River, and a pair of birds were located by the author in a thick growth of nettles and willow brush in the river bottom near Lane's Bridge, April 29, 1911.

Few of these towhees are to be found at our low elevation during the nesting season, but in October they begin to appear, and gradually become more common from that time on. Through all the winter months they are present in greater numbers than their shy, retiring habits would seem to indicate. Their favorite resorts are the brush piles and thickets, at the edges of vineyards and along ditches, where there is always some protecting heap of brush. At the least disturbance the birds dive into these brush heaps, from which their single harsh note is sometimes heard, although the elusive owner of that catlike voice may not permit us even a glimpse of his handsome black, white and orange coat.

If the spring is late the Spurred Towhees remain until several of April's best days have gone, especially if there is a cold, rainy period during the preceding month. When, as frequently happens, March brings along a succession of bright, warm, cloudless days, the desire to return again to their summer homes in the mountains becomes too strong; and before we are aware of the fact the Spurred Towhee is no longer present in the valley.

BLACK-HEADED GROSBEEK. *Zamelodia melanocephala* (Swainson).

Black-headed Grosbeaks occur sparingly in the spring along some of the larger ditches, among the willows in the river bottoms, and wherever in the valley a half acre of timber is to be found.

Nearly all of the few that I have observed were males in most brilliant plumage; and I have generally been attracted by the loud rich song, which always brings to memory my boyhood days, spent so pleasantly in the Tehachapi Mountains.

Grosbeaks—a single male in each case—have been noted as follows: in the willow swamp near Sunnyside, April 22, 1906; in a willow thicket on the Gould ditch near Tarpey, June 12, 1910; and near Lane's Bridge, on the San Joaquin River, April 29, 1911. I am informed on good authority that they occasionally nest at the last mentioned place.

The spring of 1912 was remarkable for the unusual number of grosbeaks that appeared in all parts of the valley. Late in April and during the first half

of May numerous pairs were observed in many of the willow clumps and along the ditches.

The splendid song of these migrants was much in evidence although the birds themselves were rather shy. So far as could be observed all of these handsome vocalists passed on to a more suitable summer home, none remaining to nest with us.

WESTERN BLUE GROSBEAK. *Guiraca caerulea lazula* (Lesson).*

While tramping around in late spring among the rank weeds and grass along the ditches or at the edge of tule ponds, a bird-lover in the San Joaquin Valley is often attracted by a sudden explosive "spink" from a large-billed, blue-coated bird, and very often this call is answered in a more subdued "pink" by a brown-colored bird, otherwise quite similar in appearance to her mate. If the date be the 18th to 20th of April it is safe to assume that a newly arrived pair of Western Blue Grosbeaks have been encountered, for these birds are among the last of our summer visitants to arrive each spring in the vicinity of Fresno.

The presence of water close at hand seems to be one of the chief requirements of this species during the nesting period. Quite as noticeable is their complete disregard for it after family cares are over, when the grosbeaks seek the driest grain fields and roadside weed patches, where they may often be seen clinging to swaying wild oats. This plant, together with the cultivated variety, forms one of their favorite foods during the month that they remain in this vicinity after their nesting season terminates, in late June or the first week in July.

Among the last birds to arrive in the spring, our Grosbeaks are probably the first to depart, and the southward migration begins early in August. Beginning before sunrise on the morning of August 8, 1911, and for the next two days at least, a migration wave of these birds was observed at Fresno. On the morning mentioned I was attracted by a subdued finch-like song hastily executed, as the singer perched just for a moment on a telephone wire that ran through the outer extremities of one of the branches of a young eucalyptus tree growing in front of my home. Hardly had the song been finished when the bird flew away toward the south, to be followed in a very few minutes by another that went through precisely the same maneuvers, even to perching on almost the exact section of wire that the other had occupied. So far as my observation could determine, the individuals seen on those three mornings were all males. Each one was travelling alone, but was probably keeping within calling distance of another. Although only about a dozen grosbeaks were seen on the three mornings, yet I had reason to believe that many others were passing over the city at the same time.

Along many of the canals and ditches in the valley grow patches of a plant, the name of which I do not recall, but which greatly resembles in appearance and manner of growth the Chrysanthemum. It would probably be no exaggeration to state that seven of every ten grosbeak nests are built in the clumps of this plant, being fastened to two or three upright shoots in much the same manner that a blackbird attaches its basket-like nest to a bunch of tules.

When built in such situations the nests vary from six inches to five feet

**Guiraca caerulea salicarius* of Grinnell. See Proceedings Biological Society of Washington, xxiv, 1911, p. 163.

above the ground, and while ridiculously easy to find when one is familiar with the birds' habits, it is doubtful if anything but mere accidental discovery would ever reveal the majority of nests to the chance prowler. Since only one pair of grosbeaks may occupy any clump of these plants, it follows, when there are not enough such sites to go around, that numerous pairs are often compelled to seek other places in which to construct their homes. A second choice becoming necessary, nests are not infrequently built in the thick bunches of small willow saplings where, again, they bear resemblance to the work of the Bi-colored Blackbird.

It sometimes happens, too, that a pair of grosbeaks will take up their residence in an orchard, when they will be found nesting in a peach tree at a height of from eight to twelve feet. The average height from the ground of the many nests observed by the writer has been about four feet; but at times a more elevated situation is chosen. Such an instance was noted on May 30, 1911. A stick was thrown into the branches of a large willow tree, where a bird of some sort could be seen occupying a nest fully twenty feet from the ground, and at the end of a small horizontal branch the tip of which took an abrupt vertical turn and hung out over a ditch full of water. With the characteristic "pink" a female Blue Grosbeak left her nest. Early in the summer of 1905 a pair of these birds built a nest about fifteen feet up, on the end of a horizontal branch of a poplar tree in a yard; so it will be seen that the bird's habits are not uniformly as terrestrial as might be supposed.

Nests of the Western Blue Grosbeak are well-made, light baskets of dry grass, weed stems and rootlets, lined with black horse-hairs if such are obtainable. I have yet to find a nest that did not have either a piece of paper or a dry, paper-like leaf woven into the framework somewhere. Sets of three and four eggs are found in about equal numbers, the time ranging from May 18 (1906) to June 23 (1901). One instance of later nesting came to my notice in 1905, when young just out of the nest were seen July 15.

The song of the male Western Blue Grosbeak greatly resembles that of a Linnet, but is not quite so loud nor prolonged.

LAZULI BUNTING. *Passerina amoena* (Say).

Throughout the valley this beautiful little finch is of regular occurrence, though in very limited numbers, being far outnumbered by its near relative, the Western Blue Grosbeak; but along the foothills the reverse order of abundance prevails, and the little blue bunting with the white wing-bars is most often seen.

Berry patches and gardens are the favorite haunts of the Lazuli Bunting during the few months that it is with us. I observed them in greater numbers near Riverdale, July 13, 1911, than I have ever seen them elsewhere in the valley. At least one pair has been known to nest for several years in a garden in the city, and each year from late April until June one or two individuals have been noted near Clovis.

May 22, 1906, a nest was found among a tangle of weeds and willow shoots along the Gould ditch near Tarpey. This nest was saddled on a small dead branch, and supported by two or three upright green stems, a situation not unlike that often chosen by the Blue Grosbeak. The composition and appearance of the

nest was more like the work of a Heermann Song Sparrow than the usual type of grosbeak nest, being composed of strips of grass blades and stems, lined with finer grass stems and a few horse-hairs. Incubation had begun, in the three pale blue eggs that composed the set.

WESTERN TANAGER. *Piranga ludoviciana* (Wilson).

This is one of the species that occur commonly in the higher mountains but are seen in the valley only as stragglers. Miss Winifred Wear records a Tanager seen within the city on May 8, 1907, and the author observed a beautiful male near the Scandinavian Colony schoolhouse the first day of June, 1908. This bird flew into the lower branches of a mulberry tree at the roadside, and I drove past only a few feet away. From all appearances the bird was perfectly healthy; but I suspect that possibly it had been injured earlier in the season, or it would hardly have remained in the heat of the valley at the time of the nesting season of this species in the high Sierras.

The present season (1912) seemed to bring quite a migration wave of Tanagers. On May 12 fully a dozen were seen in a half hour's walk along the Gould ditch near Tarpey. All appeared to be males in the brightest plumage and were quite fearless. One fine fellow, panting with the heat, perched not ten feet away while I slowly walked past. Later, on the twentieth day of the same month, another was seen flying from a bush at the roadside near Easton, south of Fresno.

WESTERN MARTIN. *Progne subis hesperia* Brewster.

The Western Martin has been observed on only two occasions, and both of the birds were probably migrants. August 22, 1904, just at dusk in the evening a Martin flew over in company with several Barn Swallows traveling toward the south. The long wings and wonderfully rapid flight gave a strange batlike appearance to this bird, which soon disappeared into the fast approaching night. Some days previous to this another individual was seen under much the same conditions, but none have been observed since that time.

Miss Winifred Wear tells of having noticed this species near Riverview, April 27, 1907.

CLIFF SWALLOW. *Petrochelidon lunifrons lunifrons* (Say).

The first arrivals of this species in the spring precede the Barn Swallows by two or three days, the two species not at any time traveling in company so far as I have observed, although it is not an uncommon sight to see Cliff Swallows and the handsome Violet-greens traveling together. As recorded in *THE CONDOR* (XIII, 1911, p. 168), the earliest records I have in the spring are March 14, 1903 and 1904, but the species seldom becomes numerous until the last week of that month. In late September large flocks may be seen journeying toward their winter home south of the United States. September 23, 1904, a warm, cloudy day, was remarkable for the great number of these birds that were seen in migration.

As the bluffs along the river bear but slight resemblance to cliffs they do not offer much attraction in the way of nesting sites, but nevertheless a small colony of these swallows sometimes nests in comparative safety just above Lane's Bridge on the Madera County side. Aside from the river bluffs there is not the slightest semblance of a cliff anywhere near Fresno, and as a consequence the Cliff Swal-

lows nest in barns and sheds, choosing those that are near some ditch or creek where mud may be obtained.

Considerable variation in nesting dates has been observed, as I have found young birds in nests examined April 29 (1910), and fresh eggs on various dates in June, up to the 27th. Four eggs, as a rule, constitute the sets in this vicinity, five being exceptional in my experience.

BARN SWALLOW. *Hirundo erythrogastra* Boddaert.

All aspiring ornithologists in the Fresno district take heart! If we cannot regale our readers with accounts of Bohemian Waxwings, Western Evening Grosbeaks, and other rarities, we can at least claim one world's record! On the 15th day of March, 1911, Mr. Joseph Grinnell and the author, while driving along the road north of Fresno, observed a pair of Barn Swallows quietly preening their wings, on a telephone wire over a bridge that crossed a large canal. Mr. Grinnell has recorded this occurrence (CONDOR, XIII, 1911, 111) as probably the earliest date on record for the appearance of this swallow anywhere in California. At the time, the fact of Barn Swallows being present by middle March did not impress me as being anything out of the ordinary, for I have always confidently looked for the species by March 20 each year. In the fall the great majority of these swallows departs during September, and excepting for a lone bird noted October 1, 1905, I have no records later than the last week in September.

One or two of my bird-loving friends from other parts of the state have expressed surprise when I mentioned the nesting of Barn Swallows in Fresno County. Their surprise would be even greater if they could see the hundreds of birds that literally swarm about some of the larger bridges crossing the sloughs southwest of Fresno in the Wheatville region.

The writer cannot call to mind even a single nest of this species that was built in a situation other than under a bridge. Eastward from Fresno, where bridges are fewer in number and usually of a smaller size, the number of nesting swallows decreases correspondingly, but even the smallest span is sure to harbor at least one or two pairs. The one essential, so far as I can learn, is the presence of running water beneath the bridge, as this renders difficult of access to enemies a nest that would otherwise be easily destroyed.

Probably at least two broods are reared each season, as occupied nests may be found from the last week in April until early August at least, the height of the breeding season being the month of June.

Very little variation exists in the nests of this species, all of them consisting of a firmly built wall-pocket composed of mud pellets mixed with long horse-hair and dry grass stems, and lined with chicken feathers in preference to all other materials, even when it requires long journeys to secure them. One pair of Barn Swallows that nested not far from my home, lined their nest entirely with white feathers, although the nearest farmhouse was half a mile away.

This species feeds almost entirely a-wing, and it is not surprising to see half a dozen Barn Swallows following a mowing machine during haying time on a ranch where alfalfa is raised, gathering in the insects which take flight as the machine passes.

TREE SWALLOW. *Iridoprocne bicolor* (Vieillot).

The Tree Swallow is the only representative of the family Hirundinidae that is to be found in Fresno County during the winter months. The species is migratory to a great extent, but a small number winter in this part of the San Joaquin Valley each year, being met with in the vicinity of ponds and sloughs more often than elsewhere.

November 29, 1904, two Tree Swallows were seen flying over a small body of water near New Hope, and the following day a flock of a dozen birds was noted flying over another pond near the same place. January 25, 1905, a lone bird was observed near Clovis as it flew overhead, traveling toward the south and twittering cheerfully. February 13, 1906, another was seen travelling in the same direction. February 27, 1906, and the following day, several were noted, all southward bound. This tendency of the Tree Swallows to travel toward the south during January and February has been mentioned before (CONDOR, XIII, 1911, p. 168); but I have not yet been convinced that these same individuals are a part of the migrant host that appears from the south during early March (6, 7, and 13, 1906), just in advance of the other species of swallows that summer with us or pass on through the valley.

April 26, 1909, a scattered colony of Tree Swallows was nesting in various natural cavities and behind loose bark, in a number of large old sycamore trees growing in a wide grassy flat near the San Joaquin River above Riverview. None of the nests were examined but the reluctance with which the birds left their nests seemed to indicate that they were incubating full sets of eggs. Elsewhere I have come upon but one colony of this species, and that was at Shaver Lake in the Sierras, at an elevation of about 5300 feet, where the nests were in dead pine stubs standing in the lake. The date was May 28, 1908, and the nests contained small young or eggs highly incubated.

It is a difficult matter to determine just when those individuals that spend their summer north of Fresno pass through this place in the fall, but probably their departure is made at the same time as, and in company with, the flocks of other swallows. This, however, is merely conjecture, as I find that after the breeding season an entire colony will scatter over the valley and gradually diminish in numbers, until the observer finally comes to realize that the species has all but disappeared, leaving no clue to the time or cause of departure.

NORTHERN VIOLET-GREEN SWALLOW. *Tachycineta thalassina lepida* Mearns.

This species occurs commonly and sometimes abundantly as a migrant through this part of the San Joaquin Valley, arriving in the spring about the same time as, but not always in company with, the several other species of swallows that pass through in large numbers. Two of my earliest dates for spring arrivals near Fresno, are March 16, 1903, and March 17, 1906. The great majority of these swallows pass on northward, but a few small colonies find conditions suitable for their requirements along the San Joaquin River just where it comes out of the hills. No time is lost after their arrival, in beginning the serious business of nest building. A small colony encountered March 25, 1906, just eight days subsequent to the date of the first arrival that year, was flying around and into the cavities of a dead sycamore stub that contained a dozen or

more woodpecker excavations. At this time none of the birds were carrying nesting material, but in 1908 at least one pair of these swallows had made some progress on their summer home, as early as March 28. They were seen to enter a dead sycamore branch time and again, first carrying a dry twig, then a grass stem, in a most businesslike manner. This instance of what seems to me very early nesting has been recorded in *THE CONDOR* (XIII, 1911, p. 168).

The return flight in the fall has been known to begin as early as September 12 (1903), and it continues for nearly a month, as I have a definite record for October 8, 1905. The southward migration is made in a leisurely matter, and often nearly a whole day is spent in circling over a pond of water or an alfalfa field, with occasional perchings on telephone wires.

I have often thought as I watched one of these iridescent beauties, as it skimmed along over a field or perched on some dead branch, that here at least was a case where the common name was highly appropriate. Were some of our other birds as well named it would not be such a difficult task to answer some of our non-ornithological friends when they ask us why *Podasocys montanus* is called "Mountain" Plover!

ROUGH-WINGED SWALLOW. *Stelgidopteryx serripennis* (Audubon).

The steep banks along the San Joaquin River that afford safe retreats for Rock Wrens and Barn Owls, have seemingly also met the conditions required by this swallow, and each spring finds several small colonies scattered along the bluffs in the vicinity of Lane's Bridge. This species arrives during late March or the first few days in April. They were observed in small numbers April 6, 7, and 8, 1911, when Mr. Grinnell and the writer found them as single individuals circling over the alfalfa fields, or prospecting in pairs along the face of the bluff, where they were seeking nesting sites.

It probably requires a full month's time after their arrival for the Rough-winged Swallows to complete a nest and begin the duties of incubation, for nest building was still in progress on April 29, 1911.

Natural cavities or those excavated by some of the smaller mammals are chosen, but before occupancy they are thoroughly renovated, as is evidenced by the small mounds of dust, leaves and trash that are to be seen below the entrances to occupied cavities.

I believe that only in exceptional cases do the birds excavate their own nest cavity, as the hard formation of these banks would seem to make such a task very difficult. Dry leaves, grass stems, and not a few twigs enter into the composition of the nests. These are placed from two to four feet from the entrance, and often several inches above the mouth of the excavation, so there is no possibility of even a driving rain entering their tunnel.

In the spring migration, and again when they depart in the late summer, it is probable that these swallows follow the course of the river, for some distance at least, as the birds are seldom observed away from the water at any time.

CEDAR WAXWING. *Bombycilla cedrorum* Vieillot.

Although the author has spent the past eleven winters in Fresno County, the presence of Cedar Waxwings has been noted just twice previous to last winter.

The first time the birds were seen was on the cold foggy morning of De-

cember 30, 1906, when a flock of about fifty was encountered in the fig trees near the Las Palmas vineyard, east of the city. I was much interested in their subdued lisping twittering, and especially in their manner of flight. As I drove along they would perch in the top of some leafless tree; suddenly the whole flock would take wing, with the intention, seemingly, of leaving the state, but after flying a few yards they invariably dropped *en masse* into the top of another tree in a surprisingly abrupt manner.

The 9th day of the following March another flock of about the same number of birds was found in the tall cottonwoods along Dry Creek east of Clovis, but unlike the first ones seen, they were wild and unapproachable, and remained in the tallest trees, from which they took wing whenever I came within three or four hundred feet of them.

The winter of 1910-11 was remarkable for the great number of Cedar Birds that frequented the valley. They were first seen about the middle of February, but did not become especially noticeable until the rainy week beginning March 1, when half a dozen flocks, varying in size from a dozen birds to nearly a hundred, were seen in various parts of the city. All through the stormy weather of March they remained, and even when the rain gave way to a succession of warm sultry days in early April, they showed no disposition to leave. Four individuals were seen on May 9, a small flock on the 17th, and a large flock, the last of the season, on May 24. In the last instance the birds flew into a large mulberry tree in the city.

A curious departure from the usual feeding habits of these birds was noted during their sojourn in the valley, for they fed almost entirely on raisins, and from all indications the diet had a most beneficial effect upon them. Along the railroad reservations on each side of the city are numerous packing houses, and around the rear of each of these may at any time be found a varied assortment of raisin stems and other refuse, among which there is a small quantity of perfectly good raisins. How the waxwings became aware of this food supply is not easily understood, as they would hardly be expected to select as a feeding ground the buildings along "Raisin Row," but be that as it may, the fact remains that nearly every house had its attendant flock of birds. They remained motionless for an hour at a time perched with almost military precision along the edge of the roof, to suddenly become an animated mass of hissing, excited birds that greedily scratched and tore through the piles of stems in search of the few raisins that still adhered thereto. Sometimes when partly concealed I have had a flock of waxwings within six feet of me, and they paid little attention to the presence of a man at a distance of thirty feet, so long as that individual did not appear to notice them. The slightest recognition, or a sudden move toward them would send the whole flock away in wild disorder.

When not actually feeding, these birds could be found in the tops of some tall leafless elms along one of the residence streets, where it seems probable that they spent the night, as the first faint rays of daylight often revealed them sitting motionless on the topmost twigs. Surely a colder or more exposed site could not have been selected.

The small boys with their sling shots found the waxwings always willing to allow them to test their skill, and not a few of the birds succumbed from that

cause; while several others are known to have perished from strangulation, in an attempt to swallow a raisin too large to pass down the throat.

The majority of the specimens examined showed very little of the wax-like tipping on the wings, only one bird having a sufficient amount to be noticeable at a distance of thirty feet.

PHAINOPEPLA. *Phainopepla nitens* (Swainson).

Phainopeplas occur commonly along the oak covered hills of the Upper Sonoran zone, which extends along the western slope of the Sierras in this county. Only on rare occasions do they get down into the valley.

March 26, 1906, I was somewhat surprised to hear the call of this species on Dry Creek, some seven miles east of Clovis, and soon located the bird, feeding in a bunch of mistletoe that grew in a large cottonwood. This was a female bird and it remained in that vicinity for some time, as I heard the unmistakable call near the same place on April 15, when I happened to be passing nearby.

CALIFORNIA SHRIKE. *Lanius ludovicianus gambeli* Ridgway.

The "butcher bird," as this species is generally called, is found in abundance on the arid plains west of Fresno, and on the large wheat and alfalfa ranches to the southwest, and it is met with little less commonly all through the more highly cultivated districts to the east of the city. It seems equally at home anywhere in the valley, while in late June, 1906, a pair were seen on a board fence above Toll House, at an elevation of about two thousand feet and quite above the digger pine belt.

Certainly no one can but feel an interest in this bird in spite of his rather bad reputation, which he seems to deserve, in part at least.

I have been impressed with the wonderful eyesight that this species possesses. Frequently I have seen one of these birds fly a distance of sixty feet or more from its perch, and pick up an object so small that it was not visible to me at less than half that distance.

During the summer months a surprising number of grasshoppers, lizards, and small horned toads are hung up, presumably to dry, with a thought, possibly, of providing against a time of food scarcity. Sometimes these unfortunate creatures are impaled on a barb of a fence wire or a splinter of wood, but as often they are wedged into a small fork of some bush or shrub.

Several instances of attacking and killing smaller birds have come to my notice. One evening just before dark I heard a commotion in a large blue gum tree, and arrived on the scene in time to see a shrike flying away with a Linnet. The prey was almost too much for him to carry, however, so I started in pursuit. I finally caused the outlaw to drop his victim, but just too late, for, with a convulsive gasp, the finch expired in my hand. On March 11, 1904, while driving home through the rain, I saw a shrike fly up from some weeds at the roadside. He was carrying a small bird, and made an attempt to alight on the lower wire of a fence, but was compelled to drop the bird in order to maintain his balance. As the shrike sat facing me he appeared to be all that his common name implies. A large tuft of bloody feathers was still held in his bill, while another villain rasped his approval from a nearby post.

On October 29, 1905, I drove two butcher birds from a feast they had just

begun. A goldfinch had been impaled on a fence barb, stripped of feathers, and partly devoured. Their rasping notes never sounded more unmusical, and they seemed to be expressing their opinion of me in no uncertain terms for disturbing them. A number of other similar instances have come under my notice, and in the majority of them the Western Vesper Sparrow has been the victim. As the shrike seems to be on the increase, especially throughout the cultivated districts, he may in time become quite a menace to the welfare of some of our smaller birds.

In the region about Fresno, where trees are fairly numerous, the California Shrike nearly always selects a tree as a place in which to build its nest, but out on the treeless plains, westward from the city, they often select rather extraordinary nesting sites. On March 20, 1907, a nest was found near McMullen in a bunch of tumble weeds that were lodged against the railroad fence. This nest, which held six eggs, was just one foot above the ground, while another, scarcely an arm's length away, appeared to be of the previous season's use. April 6, 1906, a nest was found on a sill in an old abandoned barn near the New Hope school-house. There were three eggs in this nest, and one more was found on some straw beneath. The nest had listed somewhat from having overbalanced in its rather insecure situation. Another nest with five eggs was found on top of a gate post between two nearly vertical boards, in just such a situation as would be chosen by a pair of Western Kingbirds. The few willow and poplar trees in that region contained one or more nests each.

On March 21, 1907, while looking up nests of the Western Red-tailed Hawk, along a steep, rocky canyon on Little Dry Creek, I discovered a bulky nest fifteen feet up in a scrub oak. The nest was supposedly that of a California Jay, so of course I began to tear my way up through the numerous short, stiff branches, but I had not climbed far before a pair of shrikes put in an appearance and began protesting. The interior of the nest and the four eggs it contained did not differ from those found in the valley, but the birds seemed strangely out of place on that rocky hillside, with oak trees all around and the roaring creek with its towering sycamores far below. At this time, and during a second inspection made on April 3, at which time the nest held small young, the parent birds were fearless, and I could have almost caught them with my hands.

In the vicinity of the city the favorite nesting sites are in the ragged, bushy willows that are found along canals, the nests being placed from two to twenty feet above the ground, averaging, however, about eight feet. A row of poplars along the roadside is a close second, for numbers of nests, while others have been found in grape vines, piles of brush, eucalyptus and fig trees, and rarely in umbrella trees.

Nests of the California Shrike are bulky and well built, with a foundation of twigs and coarse weed stems, the inner cavity being compactly put together with fine, stiff grass and weed stems. Where wool or cotton is obtainable a thick coat of these materials is used as a lining, but in the absence of these, various kinds of plant fuzz and woolly seed pods are made use of. I have met with but one instance where any feathers were used for lining, and in that case feathers were about the only material obtainable.

Below are given my records of thirty-one sets of the California Shrike examined during the last ten years:

	Date		Contents of Nest	Incubation
(1)	April 8	1902	5 eggs	begun
	" 11	"	5 "	far advanced
	" 11	"	6 "	advanced
	" 11	"	7 "	6 addled eggs, 1 bird
	" 12	"	4 "	fresh
	" 21	"	5 "	begun
(2)	" 23	"	6 "	begun
	" 27	"	6 "	far advanced
	May 12	"	6 "	begun
(3)	" 12	"	8 "	begun
(4)	" 31	"	7 "	slight
	April 6	1906	7 "	nearly fresh
	" 6	"	7 "	large embryos
	" 6	"	7 "	about half
	" 7	"	6 "	well begun
	" 7	"	5 "	probably well along
	" 10	"	6 "	begun
	" 15	"	5 "	fresh
	" 24	"	5 "	begun
	" 25	"	6 "	begun
	March 9	1907	4 "	small embryos
	" 20	"	6 "	good sized embryos
	" 20	"	6 "	nearly fresh
	" 21	"	4 "	begun
	April 17	"	5 "	small embryos
	" 11	1908	4 "	advanced
	" 12	"	5 "	well begun
	March 29	1909	7 "	fresh
	" 31	1911	6 "	incubation not determined
	" 31	"	6 "	incubation not determined
	April 11	"	7 "	advanced

The figures before certain dates in 1902 indicate the first, second, third, and fourth sets of one pair of birds, a more complete record of which can be found in *THE CONDOR* (XI, 1909, pp. 82, 83).

From the foregoing table it might seem that practically all our shrikes nest in April, with only an occasional early pair starting housekeeping in March, but it should be noticed that the list enumerates nests with eggs only, no record being given for nests with young birds. On April 6 and 7, 1906, besides the five nests mentioned, nearly a dozen were observed that held young birds, some of which climbed from the nest at my approach. Mr. Joseph Sloanaker reports a nest of almost fully fledged young found near Raisin on March 31, 1911. On April 12, 1902, I found in a large willow a nest that the young had just left, as they were still climbing about in the branches, while but a few feet away, in the same tree, the parents had a new nest with a single fresh egg.

On the plains to the west and southwest of Fresno, fully as many occupied nests could be found in March as in April, and two broods are often raised; but throughout the cultivated region east of the city it is not often that a nest contains eggs before the first week in April, and seldom, if ever, is more than one family raised in a season.

A difficult task awaits the ornithologist who attempts to convince some people that the series of liquid, musical, warbling notes, often heard in winter or very early in the spring, are really produced by a "butcher bird." I cannot agree with those who suggest that the song is given from a place of concealment and for the purpose of attracting smaller birds within striking distance. On every occasion when this song was heard I have been able to locate the bird perched on the highest point of vantage to be found. Sometimes the top of a tall weed is selected, often a fence post or telephone wire is chosen, and not infrequently the topmost branch of a leafless tree is made use of. In either case the bird is generally visible for a long distance.

As almost all of our feathered neighbors, by song or mannerism, make known to us the approach of their nesting time, it seems to me that the vocal effort of our shrike is nothing less than an expression of exuberance he feels at the approach of another nuptial season.

CALIFORNIA LEAST VIREO. *Vireo belli pusillus* Coues.

On more than one occasion the writer has endeavored, while listening to this bird, to formulate a good description of its remarkable song, if such vocal efforts could be called by that name. Each attempt, however, has been a failure. The only object of the bird, seemingly, is to keep everlastingly at it, much as some people sing or whistle at their work, almost unconscious of the fact themselves. Over and over, for hours at a time, the Least Vireo repeats its succession of seven or eight not very musical notes with a persistency worthy of a better effect, yet there is a certain indefinable charm about it that prevents the song from becoming monotonous.

The volume of sound seems much too great to come from so small a bird; but the little singer never seems to tire, and continues to vocalize, always with the same zest, as it searches for food totally oblivious of the presence of any other creature. Sometimes, but not often, the Least Vireo raises its voice and emits a little squeaky mouse-like song for a few seconds, but always drops back at once to the same old grind again.

In the Fresno district, from the first of April until the end of the nesting season, the Least Vireo is a common species over much of the lower part of the valley, being found along the canals and ditches. Here it frequents the willows preferring the large trees, when on its foraging expeditions, rather than the more dense growths of saplings, but choosing the lower clumps for suitable nesting sites.

May 25, 1906, during a steady rain that prevailed the greater part of the day, I was so fortunate as to find two nests of this bird, built but a short distance apart, in the willows along the Gould ditch southeast of Clovis. One of these nests was hung in the forks of a small, swaying, green willow branch, just four feet above the ground, in a dense growth of horizontal willow shoots clustered thickly around the stump of an old tree on the ditch bank. Rank

grass and wild oats partly concealed the nest, and a neater, more skillfully woven one it would be hard to imagine. The upper walls were less than a quarter of an inch in thickness but were so well put together with very fine dry grass stems, plant fibers, and cotton, as to be quite waterproof. The inside diameter was one and three-quarter inches while the interior depth was one and one-half inches. There were four fresh eggs.

In marked contrast was the second nest, which was suspended in plain view, from a dead branch three feet above the ground, near the path along the ditch bank. The very lack of concealment made this nest rather difficult to detect, even after I had first discovered it, as on a subsequent visit it required no little search to find it. The owner was covering four heavily incubated eggs.

Other nests found were in similar situations often being suspended directly above the running water and scarcely a foot from it. In two cases that came under my notice, however, the nests were fully twelve feet above the ditch in large willows, one of them being artfully concealed in one of several tufts of a cotton-like substance that had lodged in the branches. The nesting season of this species is a very short one, as my earliest record is May 15, 1910, for an incomplete set of fresh eggs, while the few nests discovered after the last week in May were found to contain small young. Justice to the various owners of the several nests discovered, compels me to confess that they were not detected by any skill on my part; for in every case, so far as I remember, I was attracted from some distance by the persistent singing of one of the birds, either on or very close to the nest.

CALIFORNIA YELLOW WARBLER. *Dendroica aestiva brewsteri* Grinnell.

Yellow Warblers are common summer visitants in limited numbers along nearly all the water courses in the valley. I have not found them breeding anywhere except in the willow association that marks the larger canals and sloughs. This network of ditches is selected as a migration route by this species, as well as by nearly all the others of the smaller migrants that pass through this part of the state. Although quite a noisy, persistent singer the Yellow Warbler is not much in evidence in spite of its gay plumage.

Ordinarily this species arrives in the vicinity of Fresno during the last week in April, and remains, probably, until late July. All of the nests the writer has examined, were composed to a large extent of a silvery colored, long plant fiber, and were placed from six to thirty feet above the ground in the small forks of willow trees, where the colors of the nest blended well with the light colored branches.

Four eggs almost invariably constitute the set, and I have found them far advanced in incubation on May 30, and only slightly incubated in mid-June.

AUDUBON WARBLER. *Dendroica auduboni auduboni* (Townsend).

One of the characteristic winter visitants to the valley is the Audubon Warbler, that restless mite of animation, whose energy seems unlimited and whose appetite is never quite satisfied. With a businesslike "chick" he sallies forth from a leafless cottonwood to seize a passing insect, then with the same "chick" he resumes his search among the branches for whatever may offer. The trees around a farmhouse, and a lonely grove far from the sound of human

voices, are equally attractive, and each has its share of birds from late September until the last of them have departed early in April.

Audubon Warblers share with Say Phoebes the habit of catching flies from a window, sometimes becoming so engrossed in this occupation as to cling for several seconds to the screen where a south-facing window affords a bountiful supply of this kind of food.

A period of two or three unusually cold nights frequently results disastrously for these little warblers, and my observations show that there is a greater mortality among this species than in all other birds combined. After a hard freeze it is not an uncommon occurrence to see certain individuals that appear so benumbed as to be almost unable to fly, and not a few dead birds have been found under trees along the streets. Probably we are safe in assuming that these unfortunates have either been injured at some time, or have become weakened through lack of food, and have finally been unable to succeed in the struggle for existence.

Since the cultivated areas with orchards and vineyards provide a foraging ground that is probably almost as productive as the former wild growths, we may expect the Audubon Warblers to be influenced less by the rapid transformation of the country than almost any other winter visitant.

BLACK-THROATED GRAY WARBLER. *Dendroica nigrescens* (Townsend).

This warbler is given a place among the birds of this district on the authority of Miss Winifred Wear, who mentions seeing a single bird near Fresno, May 15, 1907. If this species occurs commonly anywhere in this region, it is during the spring migration; but as this part of the San Joaquin Valley appears to be not in line with the route followed by most of the migrant warblers, it is probable that *Dendroica nigrescens* appears only as a straggler, and at more or less infrequent intervals.

WESTERN YELLOWTHROAT. *Geothlypis trichas occidentalis* Brewster.

This is one of the handsomest, and unfortunately one of the shyest, of the warbler family that occurs in the Fresno district. Unless the observer is familiar with its song the species might remain undetected where it is really quite common. April 6, 1911, Mr. Grinnell and the author found the Yellowthroats present in some numbers in the rank growth of nettles and young willows in the river bottom near Lane's Bridge. Several pairs, probably, were frequenting the tangle near camp.

The distribution of this species over the valley is limited to such tracts as have felt the influence of irrigation; hence Yellowthroats, like our song sparrows, are found for the most part along canals and in the few natural swampy areas. The flume ponds east of Clovis support a few pairs annually, and each spring I have seen one or two along the Gould ditch. It seems safe to assume, although it has never been proven, that the overflowed areas near Wheatville would support nine-tenths of all the Fresno County Yellowthroats. Although the writer has at times searched persistently he has succeeded in finding but one nest, and that one was stumbled upon unexpectedly April 22, 1906, in a willow swamp near Sunnyside. A bunch of tules about eight inches above a pool of slimy water supported the nest, which was in all respects remarkably like the average

song sparrow's work, though perhaps just a shade smaller in interior measurements. This nest was overrun with ants, but they had not in any way damaged the single fresh egg. The nest was a framework of dry grass, scantily lined with horse-hair. During the time that I was present one of the owners of the nest remained nearby, frequently uttering a guttural "chuck", but always keeping well concealed in the tules.

LONG-TAILED CHAT. *Icteria virens longicauda* Lawrence.

The splendid whistling voice of this near rival of our Mockingbird often greets the bird student who prowls about among the thick clumps of willow saplings and tangled vines. We are probably safe in assuming that the owner of that voice is not far away, but it usually requires a deal of patience and no little caution to prove the correctness of such a surmise.

I consider the Chat a regular summer visitant to this part of the valley, but in very limited numbers. Usually, somewhere along the course of one of the larger ditches, a pair of Chats are to be encountered, but it may be a mile to the next pair.

April 29, 1911, long before reaching the thick growth of the river bottom near Lane's Bridge, I was aware of the presence of, it seemed, not less than fifty Chats. The willows fairly echoed with their voices, as the birds whistled, called, scolded, sang, and chattered, apparently from half-a-dozen places at once; and it was with some difficulty that I convinced my companion that this medley of notes was produced by just one pair of birds.

Often, in early summer, I have heard the scolding of this bird near Tarpey, where, along a large ditch, a number of blackberry vines have run riot among the willow shoots. It was there, on June 12, 1910, that I found a cleverly concealed nest built three feet above the ground. This nest contained in its make-up a number of dead leaves having a texture much like paper, the whole nest being remarkably light in weight. There were four eggs in which incubation was just begun.

GOLDEN PILEOLATED WARBLER. *Wilsonia pusilla chryseola* Ridgway.

From the evidence at hand it seems that this handsome, black-capped warbler pursues a course on its northern journey in the spring different from the route selected for the return migration in the fall. At any rate this species has not been observed before the nesting season, but appears regularly in limited numbers during the month of September. *Chryscola* is an early migrant, my earliest record being September 17, 1905, when a single bird was seen. From that time until the end of the month they were quite common, and frequented the brush piles and low bushes rather than the higher trees. I have no record of a Pileolated Warbler occurring later than October 8 (1904), so it seems that these birds must hurry through the valley with hardly a pause. Probably the food supply during September is at low ebb, and the birds find it necessary to seek more profitable foraging areas.

AMERICAN PIPIT. *Anthus rubescens* (Tunstall).

Pipits are of common but somewhat irregular occurrence through the winter, over nearly all the region about Fresno. Their querulous voice, their

nervous teetering up and down as they run along the ground, and especially their habit of suddenly dropping into a field or vacant lot to begin feeding greedily, often tends to create the impression that they are transients, and have just stopped over for lunch in the midst of a long journey.

Open fields, especially those that have been recently plowed or are free from weeds or stubble, are the favorite feeding grounds of these birds; and it is probably because their requirements in this regard are so similar to those of the California Horned Lark that the two species are often found together.

Pipits arrive in the fall about the middle of October along with the host of migrant sparrows, my earliest record being October 20 (1905). In the spring the last individuals do not depart for their northern nesting grounds until well into April. I have a definite record of one seen April 11, 1906.

This species was unusually numerous during the past winter (1910-11), one flock feeding in the railroad yards in the city, where they were often seen, especially late in the afternoons and on dark, cloudy days just preceding rain storms.

WESTERN MOCKINGBIRD. *Mimus polyglottos leucopterus* (Vigors).

Mockingbirds are so well and favorably known that extensive comment upon them seems unnecessary. It might not be out of place, however, to give a few dates from this locality for comparison with those from other parts of the state.

This species is, on the whole, one of the most abundant of the non-gregarious birds occurring in the Fresno district, their numbers not varying noticeably from year to year in the cultivated areas, but showing a decided increase wherever new tracts of land have been brought under cultivation in recent years. The writer has observed Mockingbirds in a small orchard surrounding a ranch house, far out on the plains near Wheatville, among the tangle of swamp growths below Riverdale, and along one or two of the creeks that lead down from the foothills; but the center of their abundance seems to be the most highly cultivated and thickly settled tracts in the valley. Orchards, hedge rows, fig-bordered vineyards, and shade trees around dwellings are favorite haunts of this famous vocalist; and from the tops of windmills, the topmost branches of trees, or the roofs of buildings, they pour forth their wonderful repertoire of song. They sing not only during the daylight hours, but, in summertime, frequently throughout the entire night as well, especially if it be moonlight.

The nesting season commences in early April, as is evidenced by the finding of a nest with four considerably incubated eggs on April 11, 1911, and numerous other nests all through the same month. Not until the first half of August has passed may we feel safe in asserting that the breeding season has closed.

August 6, 1902, a nest was found with three small young birds, August 1, 1904, another nest contained three incubated eggs, and on the same date the following year a pair of these birds were found to be incubating a set of five eggs. My records for July, as well as May and June, are too numerous to mention. Three or four eggs usually constitute the sets, but five is not an uncommon number. A record of forty-one sets definitely recorded shows seventeen

of three, eighteen of four, and six of five eggs each, and this proportion would probably hold good from year to year.

A tendency to deposit their eggs late in the forenoon has been noticed in this species, more than in any other. April 25, 1907, a nest was found with two eggs, and neither of the owners were anywhere about although it was then after ten o'clock. Shortly afterwards one of the birds flew to the nest, and a glance into their home in mid-afternoon revealed a third egg. This and other similar instances somewhat upset a theory that I had entertained in my younger days, to the effect that birds, as a rule, deposit their eggs early in the morning.

It may be said that any kind of a bush, shrub, or tree that affords some slight degree of concealment is liable to be chosen as a nesting site. The height from the ground varies from two feet when the nest is built in a grape vine, up to fifteen feet in willows, but an average height would be from five to seven feet.

Any mention of this species would be incomplete unless the writer related a rather amusing incident that occurred several years since. A lady visiting this city from Pasadena was heard to express her dislike for a place where Mockingbirds were not to be found, and she assured one of her friends that in the two or three days that she had been in this vicinity she had neither seen nor heard one of these, her favorite birds. All this despite the fact that not sixty feet distant in the top of a shade tree, a Mockingbird was pouring forth a flood of melody that could hardly have failed to arouse enthusiasm in any bird lover, even had the bird been concealed!

CALIFORNIA THRASHER. *Toxostoma redivivum* (Gambel).

This thrasher is mentioned on the authority of Miss Winifred Wear, who records a single bird seen in the brush near Riverview, on the San Joaquin River, May 9, 1908.

The writer has seen but one thrasher in this part of the state, and that one was observed on a brush-covered hillside above Toll House, June 27, 1906. Upon being too closely approached the bird arose and flew across a small canyon. This record is, of course, outside the limits of the region treated in the present paper, but is given on account of the rarity of the species in Fresno County.

ROCK WREN. *Salpinctes obsoletus obsoletus* (Say).

Along the rocky bluff that parallels the San Joaquin River near Lane's Bridge, several pairs of Rock Wrens find conditions suitable to their requirements, and may often be seen climbing up the rough surface of a boulder or engaging in short flights along the face of some ledge. The loud whistling song, echoing along the bluffs, is one of the most pleasing of all the tuneful ditties that greet the bird lover, but perhaps just a little of its charm lies in the fact that the only other bird voices heard in contrast are the screams of the Barn Owls that sally forth at dusk from these same cliffs, and occasionally the cawing of a band of Crows over among the willow thickets.

On the ninth of April, 1911, a Rock Wren's nest was found in a small cavity that led upward about three feet in the soft crumbling rock. The entrance was quite conspicuous, even at some little distance, on account of the many small pieces of rock that were placed about the mouth of the excavation in such a manner as to leave only a very small hole through which the wrens en-

tered. As a means of protection against the various rodents that inhabit this bluff, no doubt, a number of thorny twigs were placed near the entrance and down the small passageway that led to the nest cavity. There a loose collection of dry grass stems was placed in a slight hole scratched in the dry dust. At that date the female had not commenced to lay, although the nest was apparently ready for eggs.

Three weeks later another pair of wrens were found singing near a small cave, and one of the birds was seen to fly from the inside on two different occasions, but no nest was to be found.

SAN JOAQUIN WREN. *Thryomanes bewicki drymoeus* Oberholser.

The nature of the country about Fresno is not such as to attract wrens of any kind in numbers. Wood sprites they are, and must have a well timbered country; so it is not surprising that the present species occurs, within the range of this paper, principally along the San Joaquin and Kings rivers and at the mouth of one or two of the creeks that lead down out of the hills. From these places they make somewhat extended visits to other parts of the valley during the winter months, and are sometimes encountered in brush piles along the canals and ditches. Here they climb over logs, dodge into brush heaps, or pry into the holes in partly dead willows, picking up from such places whatever offers in the way of food. While quite generally distributed some winters, they are not at any time abundant.

April 8, 1911, the writer secured for identification an example of this wren from a large, ragged old willow tree growing near the river below Lane's Bridge. This specimen is now in the Museum at the University of California, and has been identified by Mr. Grinnell as the "San Joaquin Wren", a form not recognized by the A. O. U. Committee, but which differs markedly from typical *charienturus*.

April 20, 1912, wrens were heard singing in the tangle of brush and willows at the Madera County end of Lane's Bridge. When I remained quiet for a few minutes one of the birds appeared with a bill full of what seemed to be nesting material. She sang several times but seemed to be suspicious. I was not able to wait for her to reveal to me the location of her nest, which was no doubt located somewhere about the timbers of the bridge.

TULE WREN. *Telmatodytes palustris paludicola* (Baird).

Marsh wrens of any species are far less numerous in Fresno County than would be expected, when we consider the hosts of marsh blackbirds that are attracted to the valley, and find conditions well suited to their needs.

In all my tramping among the tules, and wading in frog ponds, I have never found a nest of these little wrens; neither have I ever seen one of the birds during the summer months. In midwinter, by tramping through the tule beds and along ditch banks, a marsh wren may sometimes, but not often, be made to take wing. From the information at hand I should put this species down only as a regular but not abundant winter visitant.

A specimen collected near Raisin City, November 10, 1910, by Mr. Joseph Sloanaker, has been identified by Mr. Grinnell as *paludicola*.

SIERRA CREEPER. *Certhia familiaris zelotes* Osgood.

The winter of 1910-11 was remarkable for the number of unusual visitants among our avian friends, that appeared in the vicinity of Fresno. By no means the least interesting of these were the little creepers, which occurred quite numerous in the willow trees that border some of the larger ditches, and doubtless elsewhere as well. December 26, 1910, and February 18, 1911, were the only days that I was able to spend in the country, but on each occasion creepers were found along the Gould ditch near Clovis, where, for the first time, I heard their squeaky, chattering song, if song it might be called.

Nature has decreed that the creeper must seek its food, not among the branches as the warblers do, but from the rough bark of the tree-trunk; and to facilitate this she has provided them with sharp spine-like tail feathers, such as the woodpeckers have, to assist in clinging to the tree as the bird hitches up and around a tree trunk. The relatively wide, flat body of these little birds tends to give them a certain resemblance to lizards, and the spotted brownish back looks, at a little distance, as if it might be covered with scales instead of feathers. Really, the resemblance that a creeper bears to a lizard as it sidles up a branch, is at times remarkable.

The creeper's method of concealment is as effective as it is unique. On one occasion I was watching one of these little birds in a small willow tree, when a Sharp-shinned Hawk flew over with a Mockingbird in its talons. As the report of the shotgun died away I was sure that the creeper had not flown; but after picking up the hawk I could not again discover my little friend, so began a careful scrutiny of every branch. After completely encircling the tree, I finally detected the creeper flattened against the trunk not ten feet from the ground. Although I could probably have dislodged him with the gun barrel, he had not moved in several minutes, and so perfectly did his plumage blend with the colors of the rough bark that the bird would certainly have been passed unnoticed had I not been aware of almost his exact location.

SLENDER-BILLED NUTHATCH. *Sitta carolinensis aculeata* Cassin.

This is another bird that is given a place on the present list as a result of the observations of Miss Winifred Wear, who has informed me that the species was found in the oaks near Laton, February 17, 1909. The Slender-billed Nuthatch should be confidently looked for in winter throughout the oak covered region south of Fresno, and possibly along the San Joaquin River below Friant; but over most of the valley the conditions are hardly suitable for a bird that is so closely associated with oak timber.

RED-BREASTED NUTHATCH. *Sitta canadensis* Linnaeus.

I have been unable to find more than one record of the occurrence of this nuthatch anywhere in this part of the valley. Miss Winifred Wear was given a single bird by one of the children in her school, late in the winter of 1911. The writer examined this specimen but did not at the time note the date of capture, or sex, and it seems to have disappeared from Miss Wear's collection. Unfortunately there was no data other than that on the tag which was attached to the skin.

PIGMY NUTHATCH. *Sitta pygmaea pygmaea* Vigors.

I have only one record of this handsome little nuthatch, and that is of a single silent individual that I chanced to find on the afternoon of November 1, 1903. A large cottonwood tree growing on the bank of the Gould ditch some two miles south of Clovis seemed to offer great possibilities in the way of food for the nuthatch worked head downward from the highest branches to the base, and then flew up near the top several times to begin a more thorough search for some morsel overlooked on the previous round. What a number of insect eggs this one bird must have gleaned from even a single tree! The occurrence of this bird was recorded in *THE CONDOR* (XI, 1909, p. 81).

CALIFORNIA BUSH-TIT. *Psaltriparus minimus californicus* Ridgway.

Over the greater part of the floor of the valley there is an entire absence of these little mouse-like birds, due, no doubt, to the lack of brush suitable for the characteristic foraging expeditions, such an essential to every well ordered flock of bush-tits. The species is very common all through the foothills, but so far as I have been able to observe, it occurs within the limits of this paper at only two or three points. It is resident in the brush and willows along the San Joaquin River below Friant, and doubtless follows down the Kings River bottom for some distance, at times.

A small flock of bush-tits that have often been encountered along Dry Creek, six miles east of Clovis, proved to be less noisy than is usual with this species, and uttered their lisping "tsit," "tsit," at rather infrequent intervals, even when the little flock was scattered over considerable area. They always appeared to be in a hurry, and hardly paused in any tree long enough to make a thorough search for the minute insects they sought.

Nest building with the members of this species begins very early in the spring as was shown by a nest found on the first day of April, 1906, in which were three tiny birds and three eggs on the point of hatching. This was a bulky, thick-walled pouch, suspended from a bunch of dead mistletoe just twelve feet from the ground, in a large cottonwood tree growing in the creek bed. In spite of the size of the nest it was not at all conspicuous, owing to the fact that it was composed almost entirely of willow blossoms and lichens, exactly the color of dead bark.

Two other nests examined May 9, 1908, near the same place, were very similar to the one described, and I was impressed with the thickness of the lining, especially in one of them. There was a solid mass of material almost as large as a base ball, composed of small feathers, many of them being a bright yellow color, evidently from a yellow warbler. In each of these nests a brood of young had been reared some weeks previously.

RUBY-CROWNED KINGLET. *Regulus calendula calendula* (Linnaeus).

The subdued scolding notes of the kinglets are sometimes heard in the shade trees about the city as early as October 15th. But not until a week or more has been spent in the higher treetops does this little creature become sufficiently accustomed to its winter home to allow us more than a glimpse of his tiny greenish form as the bird flits about from branch to branch in a most restless manner. When once its shyness has been overcome, however, this is one of the

most fearless of all our winter birds. In point of size this species is one of the smallest of the many winter visitants to the valley, but its trim form, bright eyes, and friendly manner combine to make it a most interesting little creature. The majority of our kinglets depart for their summer homes in the mountains during late March, but as late as April 15 (1906) a few were still to be seen along the Gould ditch near Clovis.

During the winter months the kinglets often associate with Audubon Warblers, probably because the feeding habits of the two species are so similar. The frequent short, flycatcher-like sallies, with their resultant snapping of bills, indicate the capture of untold insects, often so minute as to be invisible to the human eye.

I was much interested one warm January day, in the efforts of a kinglet to remove from its plumage a quantity of resin or gum that had adhered to it from contact with the branches of a pepper tree. As the little fellow perched scarce six feet away, twisting first to one side then to the other, the occasional flash of his brilliant crown-patch contrasted strongly with the bright green background of leaves. Resting a moment after each violent exertion the diminutive creature would suddenly seize a particle of the troublesome matter in his bill, and tug until it seemed that he would actually pluck the primary feathers from his wings. Finally the gum was sufficiently removed to allow free use of each feather, and Kinglet again became a busy, restless little sprite, with no time for anything but the serious business of getting a meal.

WESTERN GNATCATCHER. *Polioptila caerulea obscura* Ridgway.

The gnatcatcher is of common occurrence in late summer and fall over the valley, but more particularly in that portion lying adjacent to the Sierra Nevada Mountains. It occurs casually at other times also, but does not breed commonly below the foothill belt. Single birds, or small scattered companies, sometimes make their appearance in orchards and brush piles as early as August 15, and from that time through all of September and the first half of October they may often be encountered. January 1, 1911, was a clear, warm day following a heavy frost of the night preceding, and I was fortunate in finding a gnatcatcher in a weed-grown berry patch within the city limits in the northern part of Fresno. The characteristic "k-gee" attracted my attention as the bird passed by, jerking about nervously. January 22 two more were seen near the same place; so that the species is sometimes a winter visitant with us.

Gnatcatchers were quite numerous in the willows along the Gould ditch, south of Clovis, during March and April, 1906, and several pairs remained to nest for the first, and also the last, time within my knowledge. A bluish-colored, lichen-covered nest found on June 6, was built fourteen feet above the ground on a dead horizontal willow branch. One of the birds was occupying the nest, in which were five fresh eggs. A more beautiful structure it would be hard to imagine, and it was almost exactly the color of the bird herself. A framework of very fine plant fibers, cobwebs and feathers, formed a light but strong basket, over which were placed tree lichens, to make the nest harmonize with the branch on which it was built.

That same day another nest was located fifteen feet up, in the vertical forks of another dead willow branch. Similar in appearance to the one described, this

nest had long been deserted, and held the dried up remains of two nearly grown young birds. Another nest, differing but little in composition or position, was found on June 23, 1906, placed twenty feet up in a large willow. The five eggs it contained were quite heavily incubated.

It would be interesting to know what peculiarly favorable conditions existed that year to attract these interesting little birds, and to induce them to remain through the breeding season.

DWARF HERMIT THRUSH. *Hylocichla guttata nanus* (Audubon).

From mid-October until March occasional examples of this thrush may be found in the willows along the ditches, where they seclude themselves for the most part in the gloomiest shady clumps of large trees. They are quite silent during the time they remain with us, and of such sluggish natures as to appear almost stupid at times. I have sometimes walked up to within five or six feet of one of these birds without causing it the least alarm. At a nearer approach it would leisurely hop to another branch, just out of arm's reach, where it would assume an air of indifference, and remain motionless for some time. The only specimen I ever collected was secured with a shot cartridge in a twenty-two caliber revolver, at a distance of about seven feet.

It is a difficult matter to attempt to ascertain in what numbers this bird occurs, as the species might easily be overlooked entirely.

WESTERN ROBIN. *Planesticus migratorius propinquus* (Ridgway).

Some winters robins appear in large numbers and spread out over the valley in flocks of from twenty to fifty or more individuals. At other times hardly a bird will be seen all winter. Climatic conditions seem to govern their abundance, and doubtless the food supply has much to do with their scarcity during certain intervals. Alfalfa fields, pasture land, and small overflowed sections are the favorite feeding grounds for Western Robins in this vicinity, and because of a like preference on the part of the Brewer Blackbird, the two species are often observed together on the ground.

Occasionally robins appear in small numbers early in November, but they are seldom much in evidence during that or the following month, and not until February do they become especially noticeable. The winters of 1903 and 1907 were notable for the abundance of these birds, particularly over much of the region northeast of Clovis and extending toward the hills.

As a rule, the last week in March may be expected to see the departure of all but a few stragglers from the lower parts of the valley, those that remain being in most cases single birds. April 4, 1907, one of these late sojourners was observed, and another was recorded the following day, while one silent individual was noted April 7, 1911, in some willows near the river below Lane's Bridge.

The caroling of these birds is seldom heard here in the valley, their most common notes being an unmusical squeak and the characteristic "kwee-kwee-kuk."

NORTHERN VARIED THRUSH. *Ixoreus naevius meruloides* (Swainson).

The occurrence of this handsome bird in winter has been reported to me on two or three different occasions; but the best record obtainable is that of Miss

Winifred Wear, who has observed Varied Thrushes several times near Fresno. In one case the bird was drinking from a hydrant in a front yard. February 27, 1907, another was seen near Fancher Creek, east of the city. The Western Robins are said to be constant companions of this thrush.

WESTERN BLUEBIRD. *Sialia mexicana occidentalis* Townsend.

During January and February each year there occurs what I term a local migration, involving, if the winter be a mild one, only a few scattered flocks of this species; but some seasons, as in 1906 and 1907, large numbers of birds are affected. A succession of two or three heavy frosts is an almost infallible sign for the appearance of Western Bluebirds, coming from the Sierra Nevada foothills. At such times these birds often fly at a great height, sometimes being almost or quite indiscernible to the unaided eye, although their clear, musical, but somewhat melancholy call notes ring out distinctly, and call attention to the loose flocks of from seven or eight to fifty birds.

So far as the writer has been able to learn, these wanderers do not commonly travel far to the westward, for bluebirds are always more common in the vicinity of Clovis than about Fresno. It would seem that the individuals prefer to remain in the hills, and leave with reluctance; so that when forced by cold or a diminishing food supply to abandon their favorite haunts, they simply scatter out over the valley, remaining as near to their former home as conditions permit.

Of a more restless nature than the Mountain Bluebird, the present species seldom remains long in one place while here, a flock continually engaging in short flights from one vineyard to another. By the 10th of March these attractive visitors have usually all disappeared.

Although somewhat out of the district included in this paper, it might be of interest to record a nest of Western Bluebird discovered on April 30, 1910. While walking along the roadside near Cottonwood Creek, in Madera County, a bluebird suddenly alighted on a branch not ten feet away, but seeing me she sang for several seconds a peculiar, subdued, warbling medley of notes, and then flew to another perch, still holding in her bill a mass of small insects of some sort. A short search revealed a nest about one foot down in a knot hole in a willow tree. The entrance was only three feet from the ground. There were several small young in the cavity.

The elevation at that place was about nine hundred feet, and while it was but a short distance up the creek to oak timber, yet it was even a shorter distance back to the dry stubble fields, the home of countless horned larks.

MOUNTAIN BLUEBIRD. *Sialia currucoides* (Bechstein).

Unlike the preceding species, this bluebird visits the lowlands regularly each winter, though in varying numbers. The present year (1912) this species was noticed in some numbers as early as October 14, but as a rule few are seen until November. The time of their greatest abundance is during the first two months of the year. March 8 (1903) is the latest I have known them to remain, and probably all the flocks depart at about the same time in the spring.

During their stay in the valley the Mountain Bluebirds are associated in small companies of from three or four to ten birds, with only an exceptional flock numbering as many as twenty-five.

A marked preference is shown for staked vineyards, where the birds spend their time either perching on the stakes or hovering in mid-air, Sparrow Hawk fashion. A company of these bluebirds in flight may be identified at a distance by their peculiar manner of poising for a few seconds on rapidly beating wings, then flying ahead in undulating swoops. They are often seen in company with Linnets, the two species frequently perching for many minutes in neighborly manner on telephone wires. The bluebirds take wing one at a time and fly ahead at the approach of an intruder, the different units of a flock sometimes becoming quite widely scattered.

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